

THE DESIGN ISSUE

ROAD TRACK

SEPTEMBER 2015

10 MOST BEAUTIFUL CARS
STARRING THE NEW FORD GT



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4C SPIDER: ALFA'S BEAUTY GOES TOPLESS
BMW'S i8 AND THE FUTURE OF THE SPORTS CAR
SHELBY DAYTONA COUPE: PERFECT UNION OF FORM & FUNCTION

THE TALE OF THE

2016 EQUINOX

AS TOLD FROM THE SAFETY OF THE DRIVER'S SEAT.

We sat down with engineer and all-around safety whiz Dennis Kazensky and seating guru Doug Bertoia to talk about safety technology and smart seating that not only helps keep us safer, but also more comfortable.



Preproduction model shown. Actual production model may vary. Available Fall 2015.



DENNIS KAZENSKY

CHEVROLET GLOBAL SYSTEMS LEAD
ACTIVE SAFETY ENGINEER

Do you think available active safety features are helping drivers become more aware on the road?

Absolutely. In fact, we design our available advanced active safety features to encourage good driving behavior, such as getting drivers to look toward the crash threat. For example, in the 2016 Equinox, we put the new available Side Blind Zone Alert on the exterior side mirrors so drivers can conveniently check for both alerts and approaching traffic outside their blind zones.

How do you determine the best way to alert the driver?

Alert design depends on several factors, including how often an alert occurs, the urgency of the crash situation and driver acceptance. For example, the Side Blind Zone Alert, offered in the 2016 Equinox, is visual only because drivers commonly experience

blind spot threats when they're already monitoring the road for that situation. On the other hand, we designed the available Rear Cross Traffic Alert in the 2016 Equinox to be more attention-getting — since these situations are less frequent and may not even be visible to the driver in crowded parking situations or driveways with side obstructions. So if crossing traffic is detected when backing up, left- or right-side audible alerts are presented to let the driver know where the traffic is coming from. In addition, red caution triangles with directional arrows appear on the rear vision camera screen so the driver can easily check what is going on behind them. We conduct careful research with drivers before preparing features for production, which is paying off, as consumer surveys indicate owners love these features.

“We design our available advanced active safety features to encourage good driving behavior.”

Dennis Kazensky

CHEVROLET GLOBAL SYSTEMS LEAD — ACTIVE SAFETY ENGINEER



DOUG BERTOIA

CHEVROLET TECHNICAL LEAD
SEAT SYSTEMS ENGINEER

How did you design the Multi-Flex® sliding rear seat and what were some of the challenges?

Equinox introduced the Multi-Flex sliding rear seat to adapt to a wide variety of different cargo and passenger needs. It definitely had its challenges when it was developed. We weren't able to utilize the center rail that attaches the seat to the underbody structure and supports the passenger weight because it would interfere with the seat's sliding functionality. In order to execute a full-width cushion with the forward and rear sliding feature, we had to manage the weight of the occupants through the seat structure without the center rail. We solved this by distributing the load to the outer sides of the seat.

What materials do you use when designing a seat and how do you test them?

Engineering a vehicle seat requires us to test a wide range of materials: the urethane foams that you sit on, various metals, electrical components and safety belt pretensioners, to name a few. Soft materials, like foam, have traditionally been very challenging to test. However, with the help of a new technology, Finite Element Analysis, we can now digitally simulate soft materials to help design seats that are structurally supportive and comfortable. It's exciting to be able to apply groundbreaking technology to help us engineer the seats of the future.



Safety features are no substitute for the driver's responsibility to operate the vehicle in a safe manner. The driver should remain attentive to traffic, surroundings and road conditions at all times. Read the vehicle Owner's Manual for more important safety information.





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SEPTEMBER 18 - 19	CIRCUIT OF THE AMERICAS	AUSTIN, TX
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FRANK STEPHENSON

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BY CHRIS CHILTON



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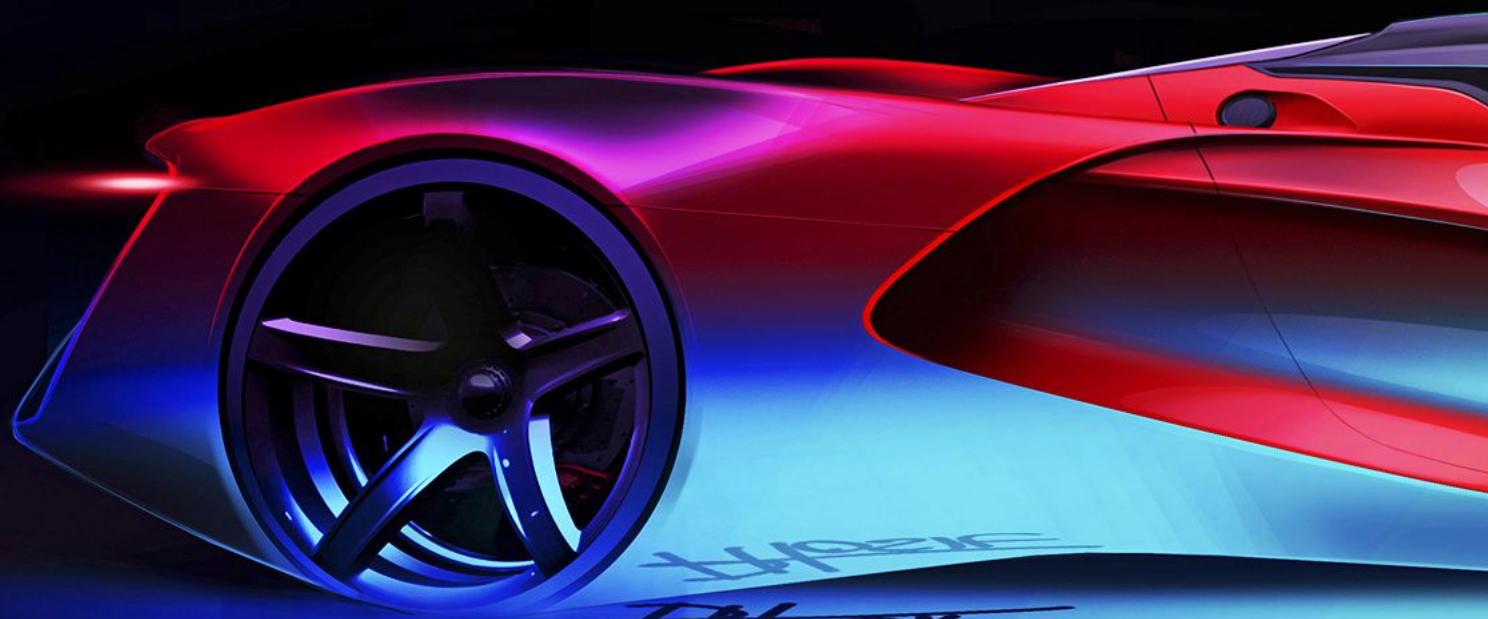
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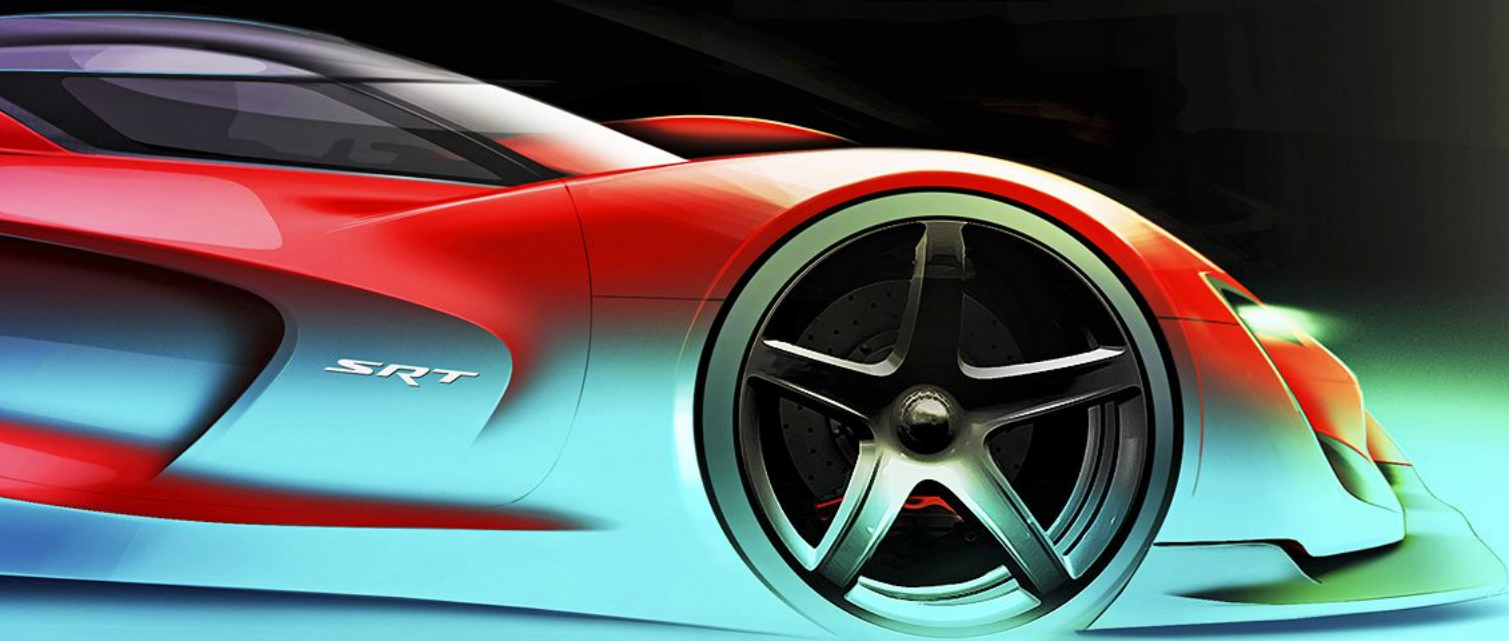
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CAPTURING THE LIFE AT SPEED



VIRTUAL BECOMES REALITY

Gran Turismo creator Kazunori Yamauchi gave automotive designers a gift with *GT6*: an unprecedented canvas on which to paint their wildest ideas. The Vision Gran Turismo project invites automakers to imagine, engineer, and create concept cars for the racing-simulation video game without the constraints of, you know, reality. Far-fetched technologies. Impossible performance. Wicked lines. And it all starts with a sketch.



DESIGNER DREAMS

SRT opened the project to every designer at Chrysler, and the Tomahawk, with three power levels, was chosen from 30 concept submissions. Why? It wasn't for its hybrid drivetrain or active aero. It just looked fast. In this world, that's enough.

DESIGNED BY PAUL HOSTE | 7.0-LITER V-10, PLUS PNEUMATIC POWER ASSIST
TOTAL POWER: 1007-2590 HP | WEIGHT: 1459-2026 LB | TOP SPEED: 250-404 MPH

GRAN TURISMO 6: TM & ©2015 SONY COMPUTER ENTERTAINMENT INC. DEVELOPED BY POLYPHONY DIGITAL INC.

Go



MORE THAN A PRETTY FACE

Engineers and designers worked together on these concepts, like they do for production models. BMW's Vision Gran Turismo may have been engineered for virtual use, but it was engineered nonetheless. It has 50/50 weight distribution and a heady twin-turbo straight-six, plus its aerodynamics and mechanicals are all "functional." That gets translated into legit driving dynamics in-game, just as the aesthetics are rendered on-screen.

DESIGNED BY BMW GROUP DESIGN
3.0-LITER TWIN-TURBO I-6
POWER: 541 HP | WEIGHT: 2601 LB

NEAR-SIGHTED

Nissan and Gran Turismo have always been thick as thieves. Polyphony, the game's development company, even designed the current GT-R's graphic interface. Last year, that partnership bore new fruit at the Goodwood Festival of Speed, where Nissan showed a full-scale model of the Concept 2020 Vision Gran Turismo. This is more than a virtual plaything—think of it as a preview of Nissan's next halo car.

DESIGNED BY MICHAEL REINTH
TWIN-TURBO V-6 HYBRID POWERTRAIN



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PIXEL TO CLAY

Once the heavy lifting is done, it's only a matter of time before the ones and zeros make it to clay. The Alpine Vision Gran Turismo adopts the best elements of the French firm's sports-car racing past and chisels them onto the future. Gorgeous in 1080p; heart-stopping in reality.

DESIGNED BY VICTOR SFIAZOF
4.5-LITER V-8 | POWER: 450 HP
WEIGHT: 1984 LB | TOP SPEED: 199 MPH



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GAME DAY

These Vision Gran Turismo concepts are more than an excuse for designers to have a field day: They're a chance for automakers to flex their creative biceps, to show the world what their people can do unshackled. And for a gross display of strength, there's no better venue than an international auto show. The Mercedes-Benz AMG Vision Gran Turismo, a car conceived for a video game, took center stage at the Los Angeles auto show.

DESIGNED BY BASTIAN BAUDY | 5.5-LITER TWIN-TURBO V-8 | POWER: 577 HP | WEIGHT: 3153 LB



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Letters

YOU'RE NOT SOLD ON THE GT4, BUT GO TO THE MAT FOR TARPS.

Dear R&T,

Porsche could sell more than 2500 examples of the Cayman GT4 ["Sold Out, No Sellout," June 2015]. Sure, they'll soon be moving at auction at extremely inflated prices due to the limited number. But if "Porsche's sports-car sales have been dwindling," as you say, then the company should build more cars like the GT4, and not in such limited quantities.

FRANK LEONETTI, SEATTLE, WASHINGTON

The subtitle for your Porsche Cayman GT4 review said: "Driver-focused, manual-only, and \$45K cheaper than a 911 GT3." What it should have said is: "Driver-focused, manual-only, and \$6600 more than a Corvette Z06."

RON McCRANIE
DENVER, COLORADO

EYE OF THE HURACÁN

As a driving instructor, avid reader of car magazines, and an enthusiast for most of my 65 years, I applaud Jack Baruth's feature on the Lamborghini Huracán ["Almost Infamous"]. I can tell he knows how to drive, but it was his writing that carried the story. "Ah, no sir, just, um, stacking some crates." That so resonated with the 16-year-old that still lives in all of us. Great article, and a guy I'd trust on the track.

CLIFF SELLERY
CARMEL, INDIANA

A few years ago, I was ready to chuck my R&T subscription. But, for some reason, I hung in there and thought, *Give these guys a break, and they might come good.* You have. Baruth's test of the Lamborghini Huracán was superb. Your writing has reached a new level, gents. Don't lose the recipe!

JOHN DARLING
TIMARU, NEW ZEALAND

I'd like to point out a correction in "Almost Infamous," where I noticed

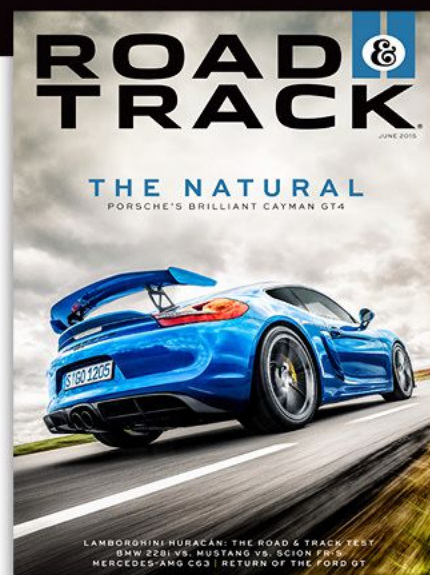
this description regarding Circuit of the Americas: "There isn't much to hit, because the men who designed it had to consider that Romain Grosjean might visit for a race or two." It appears you misspelled "Pastor Maldonado."

GREG JOHNSON
LAS VEGAS, NEVADA



HAMMERTIME

Max Prince's report on King of the Hammers ["Blood From a Stone"] is one of the best pieces of racing coverage ever. I've attended every KOH since 2009, and the article accurately conveyed the excitement and atmosphere of this event. However, I take issue with depicting the pits as dump. Because off-highway vehicle areas are often shut down due to pressure from environmentalist groups, the trucks are on tarps to ensure fluid spills are contained. Johnson Valley is one of the last open-riding areas in America. Everyone there has a vested interest in preserving and protecting it



from closure. These tarps should have been portrayed in a positive light.

GEOFFREY BEASLEY
CONCORD, CALIFORNIA

TWIN STUDIES

I dug Jason Cammisa's piece on the FR-S vs. Mustang vs. 228i ["Side by Sideways"]. I'm intrigued by his comment about the Subaru BRZ being superior on the track. Are there material differences in Subaru and Scion versions, other than cosmetic? If so, does he prefer the BRZ?

BOBBY GALLAGHER
NEW YORK, NEW YORK

Cammisa says: "Indeed, there are suspension-tuning differences. As a result, the Subie is easier to control at the limit. It's less work and prefers to be neutral, whereas the Scion loves to be butt-first around corners."

In "Side by Sideways," the reference to the FR-S as "half a Lotus lighter than the Mustang" brought a smile to my face. I have used Lotus as a unit of measurement for years. Now that cars have gotten so heavy, I think of them in multiples of Lotus. Sometimes, I complicate it by thinking: *Car A equals one Elan plus one Plus 2.* Normally now it's multiples of Plus 2.

DAVID FUNNELL
WINDSOR, ONTARIO

CONTINUED ►



THE TALE OF THE 2016 TRAVERSE

AS TOLD FROM THE SAFETY OF THE DRIVER SEAT.

We sat down with Scott Thomas, one of the inventors of the industry-first Front Center Air Bag¹ available in the 2016 Chevrolet Traverse. Scott's career in safety restraints spans more than 25 years and 50 patents. He always has customers in mind, and the Front Center Air Bag is an embodiment of his hard work.



SCOTT THOMAS

SENIOR STAFF ENGINEER,
ADVANCED RESTRAINT SYSTEMS

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EDITOR'S LETTER BY LARRY WEBSTER

PETE BROCK RAN HIS HAND down the Shelby Cobra Daytona Coupe's iconic squared tail section.

"See how the rear panel is recessed into the body, and not flush with the sides?" he asked. "That gives the back end tubularity and lightens the whole area. Otherwise, it would look like a slab of concrete."

I was hypnotized listening to Brock, the prolific designer behind the coupe. Shocked, too, that he'd taken such care to get the styling right. I'd always assumed that chopped-off Kammback was purely an aerodynamic device—a tool to coax the air flowing over and under the car to rejoin with less turbulence, reducing drag. I thought it just happened to look pretty. I was wrong.

"First you make it fast, and then try to marry in some sort of aesthetic sense," Brock told me. "People won't accept it if it's ugly."

Humans are naturally programmed to seek out beauty. We look for it in nature and our mates and, certainly, in our cars. This month's Design Issue presented the perfect opportunity to celebrate the Daytona Coupe, the prettiest racing car ever made, and an important anniversary.

"First you make it fast, and then try to marry in some sort of aesthetic sense. People won't accept it if it's ugly."

Fifty years have passed since the coupe upset Ferrari and won the FIA GT championship. Earlier this year, editor-at-large Sam Smith and I enlisted Brock to help us tell the story and experience this incredible machine. All six original coupes, each now worth north of \$10 million, were either previously engaged or otherwise unsuitable. Enter Charlie Stringfellow.

In August 2003, he hired Mike McCluskey to build an exact replica of the Daytona Coupe. McCluskey started restoring Shelby Cobras in 1969 and has since built 27 of 30 Daytona Coupe re-creations. Brock personally vouched for the authenticity of Stringfellow's car. According to him, it is a Daytona Coupe. We'll take his word for it.

So, Stringfellow, Brock, Smith, and I gathered at Summit Point Motorsports Park in West Virginia this spring. Stringfellow couldn't have been more generous with the car, and we all were schooled in the Daytona Coupe by the very man who created it. Smith got behind the wheel and realized a childhood dream. I mostly just gawked at it.

Yes, the Daytona Coupe is a masterpiece. It's also a reference point. Which modern production and competition cars, we wondered, will still leave us slack-jawed 50 years from now? For answers, we leaned on the eye of longtime contributor Jeff Zwart. The aesthetic of his award-winning photography and television commercials inspires the same emotional reaction we strive to present every month. You can find Zwart's choices for the 10 most beautiful cars of the century (thus far) on page 52.

Beauty in nature can be coincidental, and beauty in people is genetic. But beauty in a car, in art and process, that's deliberate. It's a choice—thousands of them, actually—that separates the prettiest racing car ever from a slab of concrete. ■

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Letters CONT.

*And, as Pythagoras once wrote:
"2 Plus 2 + 1 Plus 4 = 1 Plus 8." Or
maybe that was Henry Manney?
Same difference, really.*

VENI, VIDI, VICI, VENTURI

Sam Smith's rundown of Weber sidedraft carburetors [Lost Art] was one of my favorite articles in a long time. The hands-on experience, becoming friends with your engine, being involved in the outcome—these are the most enjoyable parts of having a car you love. I'll take the analog aspect over the digital.

COTY HAYNES
BRISTOL, VIRGINIA

LIGHT 'EM UP

I was so happy to see a photo of Bob Lutz without a cigar. I have great respect for Mr. Lutz and his column, but have always felt that showing him with a stogie is gross. Thank you for ditching it, and I hope Go Lutz Yourself continues sans cigar.

JOHN STARKWEATHER
LOS ANGELES, CALIFORNIA

Well. This is awkward.

RE: THE CUT OF THE JIB

Please stop dumbing down America by using the term "four-door coupe." You know what isn't coupelike? Any car with four doors. You know what has all the essence of a coupe? Any hardtop with two doors. What's next? A "fixed-roof spyder"?

DARRIN ZANKL
TAMPA, FLORIDA

"Coupé" is a French term, which translates (poorly) into English as "cut." As in, the roofline of this car has been chopped. No arbitrary number of doors, technically, although we agree a two-door hardtop is the coupe ideal. Next topic: Is there anything we can't blame on the French?

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RULES OF THE ROAD



GAS STOPS

Fuel stops should only be taken at minimart-integrated stations that are visible from the highway. Each passenger must purchase one scratch-it per trip leg—all winnings go towards a group dinner at end destination.



CO-PILOT DUTIES

Co-pilot must remain awake at all times and be able to navigate, adjust the stereo/tunes, hand food to the driver and psycho-analyze late night ramblings.



3-STRIKE STEREO RULE

Each passenger gets one opportunity to DJ per half day. A warning is given for first song skip request. After three, audio privileges are revoked until the following day.



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No rest stop breaks before the 100-mile mark in the trip. (Exception can be made for the presence of blood.) A request to stop prior to the initial mileage achievement will result in a "picking up lunch" penalty.



TOOT-TOOT

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Wall Drug

A FIRST TIME AT INDY, CARS IN YOUR LAP.

SMITHOLOGY BY SAM SMITH

WHEN A CAR DOES 230 MPH two feet from your face, you feel it. The sudden thwack of evacuated air. A whole-body muscle spasm. And above all, engine noise, whip-cracking into your core, there and gone in a heartbeat.

Run, it all says. Because there is a surprisingly violent thing nearby, and since the dawn of the human race, surprising objects yowling directly into your colon have meant you are about to get eaten.

Or that you're on the wall at Indianapolis.

I went to the Speedway this year for Indy 500 qualifying. The 500 is a touchstone, but embarrassingly, I had never ached to see it in person. Or had any love for ovals. I got on a plane thanks to my friend Marshall Pruett, R&T's chief motorsport correspondent. When I texted him last winter and announced that we should hang out, he suggested 500 time trials.

"There aren't many fans," he said, "but that's the brilliance. We'll have the place to ourselves as fools crack 230 mph each lap. Standing two feet from cars tracking out in Turn 1 will change your perception of speed and safety forever."

Something shifted in my oblongata. "YEDGFRAPPA," I typed on my phone, which is what you write when your fingers are so excited, you can't assemble complex words, like "yes."

Like much of motorsport these days, IndyCar is in an odd spot. The drivers are fantastic, but the cars—one chassis (Dallara) and two engine manufacturers (Honda and Chevy)—are as compelling as old socks. Outside of the 500, no one's watching, even in historically popular stops. (In June, an estimated 10,000 fans dribbled into California's Auto Club Speedway, a 2.0-mile oval that can hold 68,000.)

Still, the sport's center remains unassailable. Four corners banked at just nine degrees and 12 minutes, and a 2.5-mile layout unchanged since 1909. Charming, view-blocking grandstand poles, like at Wrigley Field. Deaths and life-changing moments have echoed off those seats. If you aren't humbled on that ground, read more history.

Every big track has "photo holes," nonpublic gaps in the catch fencing for credentialed photographers. The last hole in the Speedway's Turn 1 happens to be inches from the end of the corner. Marshall, a former race engineer turned photojournalist, took me there. Never take your eyes off the track, he said.

"If things go wrong, you won't have much time to run. Less if you rely on your hearing for warning."

Sure, I said, but isn't there catch fencing?

"The fencing grabs whole cars, but the holes in it are about nine inches square. Two hundred miles per hour pulverizes things, and pulverized car parts fit through nine square inches."

I looked at the nearest stands, 20 feet back. Then the first

cars came through and pulled my spleen out through my ears.

Indy in person is not Indy on TV. From the front straight, Turn 1 looks like a wall, but guys enter—235 mph in practice this year—without lifting, tire scrub shaving about 5 mph by mid-corner. It seems impossible, but it happens, lap after lap. And there is still palpable risk. When a driver gets a trimmed-out, low-downforce car visibly sideways in a crosswind and somehow saves it. Qualifying laps attributable only to cojones. Hot days where, if you can't catch a sliding car, you're in the fence.

TV removes the violence. After five minutes on the wall, you hate the cameras. If a driver's fighting understeer, the nose hopscotching at the apex, he can get eerily close. The air is more violent with every mile per hour and inch; three laps in, you can ID the fast guys solely by sound and pressure. You keep your eyes up even when you don't have to, mesmerized. Trying, all



Indy in person is not Indy on TV. After five minutes on the wall, you hate the cameras.

the while, to remember the last time you met a road course and thought, *This is the ballsiest thing I've ever seen.*

At the end of my time on the wall, I turned to Marshall, dazed. "If you could somehow pipe this experience into people's homes, you'd make billions." He nodded, as if it were obvious. Another car tore by and ripped my lungs out through my nose.

By chance, the day after I got home from Indiana, an old club-racing friend called to catch up. As an afterthought, I mentioned the Speedway.

"Oval racing is boring," he said, dismissively. "Just a bunch of lefts."

I almost hung up. ■

Sam Smith is an editor at large at R&T. He is generally identifiable by sound and pressure.

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Fitting In

MIDAFTERNOON ON THE MULSANNE STRAIGHT.

BLEND LINES BY SAM POSEY

MY FAVORITE CAR? The Ferrari 512M that I drove for Luigi Chinetti's North American Racing Team (NART) in 1971. The year before, we had run a 512S, finishing fourth at Le Mans, the highest-placed Ferrari. The M was a refinement of the S, and word filtered back to us that in testing it was a lot faster—really, a whole new car.

Le Mans was NART's big race. Mr. Chinetti had won it in 1949, driving all but 30 minutes—an ironman act for which he was justly famous. He and Enzo were friends, and NART enjoyed a privileged status at Ferrari—it was a sort of unofficial works team. One question that arose during planning for the 1971 season was whether I would fit in the new car. If I didn't—I was six foot one—they'd have to redesign the pedal area, which included the front bulkhead. Or NART would have to hire a shorter driver.

I was told to go to Maranello. When I arrived at the factory, I was led to a small courtyard, where our new car was rolled out for me to see. The moment had a touch of formality—the introduction of the car to its driver—and I could feel the pride the men had in their creation. It was beautiful. Beauty, of course, means different things to different people. Most racing cars have a form-follows-function aesthetic, and the 512M was no exception. Its chiseled nose suggested slicing through the air, and its aggressive stance gave it the look of a car ready for battle.

I fit—barely. The M was tighter than the cramp-inducing S, but I was already in love with the car and determined to drive it no matter what. NART hired Tony Adamowicz as my co-driver. Tony had won the F5000 championship two years before, and we knew he had the speed. But Mr. Chinetti and his team manager, Dick Fritz, weren't looking for speed—the Porsches and some of the works Ferraris were too fast for us to race head-on, and our best chance was to be around at the finish.

Halfway through the first lap, amid the chaos of racing three abreast, I saw the oil-pressure warning light flicker. In the pits, the crew found it was only a minor glitch in the electrical system, but the stop cost us a couple minutes. The track is eight miles around, and when I accelerated out of the pits, there wasn't a car in sight. In the chemistry of the moment, it seemed okay—necessary, even—to do a little catching up.

Never, before or since, have I had a driving experience quite like this one. It was midafternoon, cool and clear—perfect conditions for going fast. My most vivid memory is of the Esses, where there were no curbs or sidewalks, only the walls rising straight up from the track. The car was so perfectly balanced and the steering so precise that as I swept through the left-to-right combination, coming closer each lap, I felt the exhilara-

tion of total control in a place where a mistake would be fatal.

On the Mulsanne straight, as the speed began to level off around 200 mph, trees blurred into walls of green, the engine note was muted, the sun shone in through the big windshield. It was warm in there, and calm. Three miles flat out, a world all its own. I looked at the prancing horse medallion in the center of the wheel and I thought with some pride that here I was, driving a Ferrari at Le Mans. You can only truly know a car when you've driven it at its limit, and in the 512M, the forces of acceleration, cornering, and braking were all equal, yet in combination, they elevated the car to a different realm.

One of my laps briefly set a record, until a 917 grabbed it back. Porsche won the race, too. We were third, making a NART car the highest-placed Ferrari for the third consecutive year.

The car is still around, and I occasionally meet up with it at a concours. It has been in good hands, and the only things miss-



I looked at the prancing horse medallion in the center of the wheel—here I was, driving a Ferrari at Le Mans.

ing are the dents and scratches, the bits of singed fiberglass or the racer's tape that create the patina that can only be acquired through racing. All that has really changed is the value, which is an abstraction because the car was never an entity of itself alone—it was always a part of a team, dependent on its mechanics, tire men, timers, caterers, drivers, and various suppliers.

Today, all that is gone; you only have the car.

But what a car. ■

Sam Posey is a member of R&T's advisory board. His collection of essays, speeches, and other works, Where the Writer Meets the Road, is now available from David Bull Publishing.



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A blurred landscape photograph showing a green field on the left and a road on the right, both blurred to suggest motion. The sky is filled with dramatic, layered clouds in shades of blue and grey, with a hint of light on the horizon.

THE DESIGN ISSUE | PAST

COUPE DE GRÂCE

IN A FORGOTTEN CORNER OF CARROLL SHELBY'S SHOP,
TALENTED YOUNG DESIGNER PETE BROCK CREATED A CAR
TO DEFEAT FERRARI AND MAKE RACING HISTORY.

BY SAM SMITH | PHOTOGRAPHY BY ROBERT KERIAN





FIFTY YEARS AGO, on July 4, 1965, a car created by a handful of California hot-rodders won America its first FIA manufacturers' road-racing championship. That machine, the 1964 Shelby Cobra Daytona Coupe, was the brainchild of designer Peter Brock. From Carroll Shelby's shop in Los Angeles, it went to Daytona, Sebring, and Europe. And chiefly, it took down Ferrari, winner of 10 FIA sports-car titles in the previous 12 years.

Just six Daytona Coupes were made. The car fit into a loophole in FIA rules that allowed manufacturers to rebody an existing model for competition—the same loophole that produced the iconic Ferrari 250 GTO, the Daytona's main rival. As such, the Daytona was mechanically identical to Shelby's Cobra roadster, complete with a 289 Ford V-8.

For the 50th anniversary of the Daytona's title, we spoke with a few of the players. We hit Summit Point's 2.2-mile Shenandoah road course in West Virginia and drove a hyperaccurate, aluminum-bodied replica built by Daytona restoration guru Mike McCluskey. We brought Peter Brock. And through the following oral history and driving impressions, we tried to catch a glimpse of what made the Daytona special.

CONSTRUCTION

Six Daytona Coupes were built. The body buck was assembled over the chassis of a crashed Cobra roadster, in Shelby's shop in Venice Beach, California.

CARROLL SHELBY: When I met Pete in 1961, he was living about 200 yards from Turn 9 at Riverside. I've never met a man who was so enthusiastic about automobiles. . . . For the first two years, he did practically everything at Shelby American. *(From a statement made before Shelby's 2012 death.)*

PETE BROCK: In 1958, I had left my design job at GM to pursue a career as a race driver in California. When Shelby offered me the job of running his School of High Performance Driving, at River-



side, in the summer of '61, it seemed like the perfect opportunity to spend time practicing what I wanted to do most.

On the off days, I ran Carroll Shelby Enterprises, the bread-and-butter projects that kept us alive, while Carroll almost single-handedly created the car that was to become the Cobra. Later, I became his director of special projects—a glorified title that allowed me to design and create almost everything the public would see . . . everything that didn't fall into everyday operations.

JOHN MORTON (*Shop Hand, Cobra Roadster Driver*): Shelby really was an idea man; he wasn't a designer. He didn't even really profess to be—he faked it a little, you know, for publicity.

BROCK: He knew his strength was his

One summer day in 1963, Shelby said, “Pete, can you design a new body for the roadster that will give us more top speed?”

men, not his cars. And he could be pretty oblique. One summer day in 1963, he said, “Pete, can you design a new body for the roadster that will give us more top speed?”

CHARLIE AGAPIOU (*Chief Mechanic*): Obviously the 289 Cobra, as a roadster, it did extremely well. It did have a lot of brute horsepower, which the Ferraris and Astons didn't have at that time.

BROCK: The roadster was devastating on U.S. tracks, which averaged about 2.5 miles per lap. In Europe, many of the straightaways were longer than an entire lap of some U.S. circuits!

BOB BONDURANT (*Driver*): Aerodynamically, the roadster was a boxcar. At Spa in 1964, we'd be flat out in fourth, and the GTOs and Porsche 904s would just drive around us and pull away.

MORTON: Peter designed T-shirts, the Cobra emblem, stuff like that. But this was kind of his breakthrough chance, and he took it very seriously. Much more than anybody else, in the beginning.

BROCK: I sketched up a few ideas—ballpoint pen on legal pads. Nothing fancy. I'd been sketching the lines in

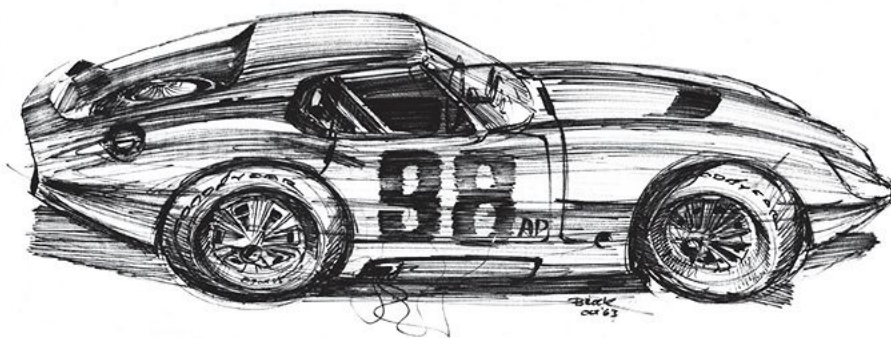
my mind and on paper for some time. While at GM, I'd found some translations of studies on automotive aerodynamics done by Dr. Wunibald Kamm in Germany in the late 1930s. The data seemed perfectly logical—why try to dispute the laws of physics? The shapes, however, looked so strange that no manufacturer was willing to risk trying them in production.

GORDON CHANCE (*Tuner*): Pete was given free rein at Shelby for one simple reason—there was nobody there that could tell him what to do. And was better than he at doin' it.

MORTON: It wasn't a very big shop—five or six thousand square feet. I remember watching that car come to be. Peter running around with a pencil in his mouth, coming down to the shop and back to the offices upstairs, measuring things on a roadster.

BROCK: The whole Daytona concept was pretty weird—but I was convinced I was right. By today's standards, we had been in the dark ages aerodynamically. It wasn't easy to hold on to my convictions. I was working with the finest group of American racers ever in one place. Their skepticism . . .

AGAPIOU: I don't think some of the guys in the shop were very excited about it.



Shelby didn't care what anyone else thought. All he asked was, "Do you think it'll work?" Yeah, I replied. "Okay, let's build it."

CHANCE: Everybody hated that f***in' car. They all hated it.

MORTON: There wasn't any sense that it was important. It seemed almost a pain in the neck that they had to go to the trouble of doing this while trying to run the roadster.

BROCK: Shelby seemed immune. Either he didn't understand what I had created, or he didn't care what anyone else thought. All he asked was, "Do you think it'll work?" Yeah, I replied. "Okay, let's build it." That was it—pure Shelby.

MORTON: There was an attitude that it was Pete's folly. Phil Remington,

I remember, said he didn't think it looked like a race car.

BROCK: All the details, that was the guys on the shop floor making it work. The car was just as much designed by them as anything I drew up. I'd put down the lines, [mechanic] John Ohlsen cut them out of plywood, and that was it. We only had 90 days to build the first car, and just enough money to build six.

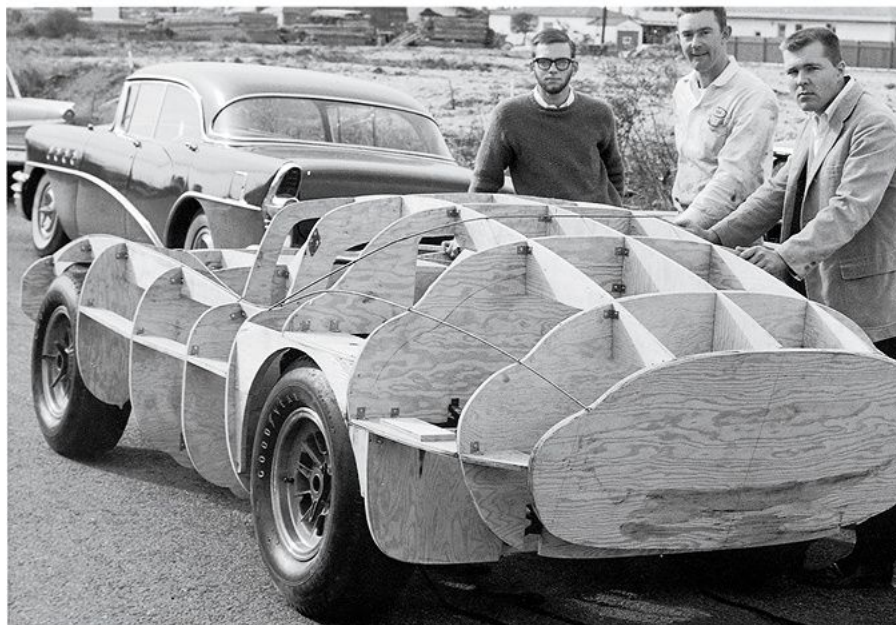
CHANCE: The first body was formed at Cal Metal Shaping, in Los Angeles. [Shelby fabricator] Jack Lane welded it together, a couple of weeks. You've probably read about the aircraft engineer who came to the shop and told Peter everything was wrong. Famous old story. Just a load of horseshit, taking the car apart.

BROCK: Benny Howard. Racing planes in the Thirties. "If what you say were true, airplanes wouldn't fly." I kept thinking, *If this guy is so smart, how come he's never heard of Kamm?*

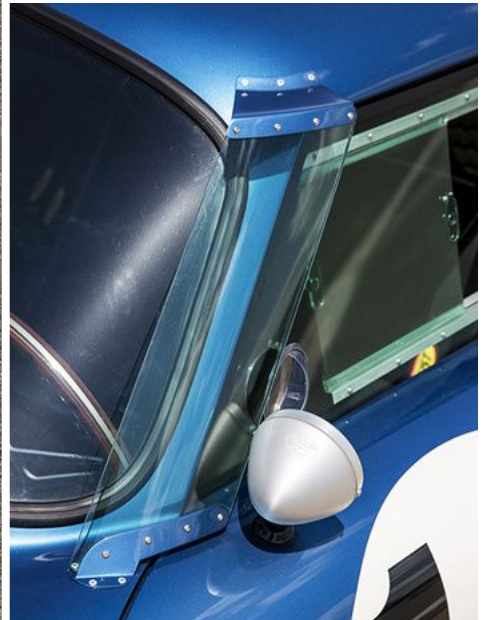
His closing remarks were, "Get rid of that flat plate area at the rear. Nobody's ever made a car that went fast that looks like that."

CHANCE: Carroll normally kept his nose out of things. He was the easiest guy

Brock's initial design for the Daytona was sketched out on a napkin (above). Once Shelby gave the green light, work began on a wooden buck upon which the body panels could be formed (left). Brock is shown at the far right.







you'd wanna work for, because he never once came into the shop and said, "Eh, you're doing that wrong." Now, you didn't wanna bend over in front of him . . .

BROCK: Carroll and Howard left for lunch. Carroll came back after. "Do you want to change anything, Pete?"

"No, I think we're right on." Long silence.

"Carroll, have I ever let you down?"

"No, but goddammit, you better be right!"

SUMMIT POINT, 2015: You're immediately struck by how small it is. A GTO is feminine; this is compact but masculine, a bulldog. Like a lot of Sixties race cars, the interior is all fasteners, as if a hardware store had explosively pollinated itself in the cockpit. And the shape is more than it seems—nearly every line is a compound curve, subtle and complex. The rear tires are almost comically wide—steamrollers under that duck's back of a tail.

Shoehorning inside takes planning. There's a massive amount of space, but most of it isn't for the driver. Seat all the way back, the wheel still hits my knees. At five foot eleven and 180 pounds, I fit an open Cobra better. I fit a GT40 better. I fit a 50-gallon drum with a hole in the top better. If you sat down and designed a machine

to make someone not want to do 180 mph in rainy race traffic at night, it would look an awful lot like this. Maybe more comfortable.

The interior is sheet aluminum, a roll bar made of eerily small tubing, simple Stewart Warner gauges, and a low-backed seat. That famous Ford shifter for the four-speed. Under the hood, a 289 and Webers. A dry-break coolant fitting. And narrow body tubing—drinking straws supporting aluminum thin enough to dent with a finger. —SS

TESTING

Resource allocation meant the remaining five coupe bodies were constructed by Carrozzeria Gransport in Modena, Ferrari's hometown. But development occurred in California, with that first car. And Shelby's legendary competition director, Ken Miles.

MORTON: I went out with it when it was first tested, and Miles gave me a ride around Riverside. Those tests were pretty laid-back. It was very much what an amateur team would do today, as far as wearing racing suits—nobody cared. You'd just get in the car and drive it around, and come back and tell whom-ever what you thought.

AGAPIOU: Ken was an engineer when he left England, and he was brilliant at sorting cars. Everything I learned, I learned from Ken Miles.

BROCK: The fact that I didn't have complete engineering drawings didn't seem to bother him in the least.

MORTON: I used to run with him sometimes in the mornings at races. Nobody else ran back then. Even though he was older than the other drivers, he had unbelievable endurance, better than mine at 21. He was skinny as a rail, kind of a remarkable guy. But he wasn't very gregarious.

BROCK: We used the long course at Riverside. I asked Miles the next morning. "It's very good," he said, "better than I expected for a first-time test."

"Yeah, but what about the handling, like up through the esses or Turn 1?"

"Look"—he was in a hurry—"there are a few small problems, but we broke our own lap record by three and a half seconds!"

*"Miles doesn't believe how fast the car is going."
The coupe was running
183 mph down the
back straight.*

CHANCE: Just immediately shattered it. Depending on the book you read, it took 200 laps, and the car was a shit-box, and it took forever to fix it. That's all Shelby bullshit.

BROCK: The mechanics repositioned it, in the center of the shop, as soon as we got home. That spoke volumes. Miles had asked them to pull the differential and verify the ratio. They grinned. "Miles doesn't believe how fast the car is going." He counted the teeth himself, then just shook his head and walked

All the Daytona's aerodynamic innovations (opposite) were honed without wind tunnels. To observe the airflow, yarn glued to the car (left) was photographed at speed from a chase car on the Riverside straightaway.



away. The coupe was running 183 mph down the back straight.

Two weeks later, we had to run 2000 kilometers at Daytona—against Ferrari.

SUMMIT POINT, 2015: *The engine starts, this barking burble. RapapapaWHAPPATACRACKATA. Sitting in the seat when it lights for the first time is like firecrackers in an airplane bathroom—you jump a little, but there's nowhere to go.*

I shuffle the car around for photography, in street clothes. The aluminum floor, inches from a header, leaves a shiny burn on my ankle the first time I accidentally relax my leg. And the second, and the third.

I brought a Nomex race suit. As I head off to put it on, Pete makes fun of me. Tells me to be a man, tape up my ankle. That Miles tested the thing in T-shirts.

So I grumble a little and think, Miles, you pansy. You only live once. And I click the car's little four-point harness shut and pull onto the track, and attempt to drive a given quantity of whee out of it. In a Le Mans car, surrounded by fuel and explosions and aluminum too hot to touch, in a tiny leather bucket, bare-ankled, in a T-shirt and khakis. The car comes on cam and explodes onto the front straight.

God help me, I love it. —SS

RACING, 1964–65

The model was announced in January of 1964. It was called Daytona, the press release noted, "because it will probably be introduced there."

BROCK: Carroll knew Enzo Ferrari personally and did not like him.

ALLEN GRANT (Driver): One of the keys to the Cobra roadster was the fact that it was so flexible. You could keep the tires on the ground—2000 pounds, 385 hp. You could kind of throw it into the corner. The coupes were stiffer—you had to drive it more like a regular sports car.

BROCK: Ferrari forced the FIA into the Appendix J rules [allowing complete new bodies] because he knew his SWB 250 was obsolete against the Jags and Astons. He never expected the rule to be used against him. And he screamed bloody murder when the Cobra appeared with a new body.

DAN GURNEY (Driver): We knew almost from the start that the coupe was special—much better than anybody expected. It was a lot of fun to drive.

GRANT: You've got to have that God-given gift, that feeling in your butt. You don't have time to think. You're dirt-tracking, on asphalt.

BROCK: During practice at Daytona in '64, Miles called to say things were going extremely well. "We're much faster than the Ferraris, Pete. Much faster." It didn't sound quite like Miles—his English reserve had evaporated.

GRANT: Keep in mind, this was an ancient, buggy-spring chassis. But once you got the hang of it . . . At Daytona, into the high bank on Turn 3, we were doing 180 mph. As hard as I tried the first time, I could not keep my foot on the throttle. But you get used to it. You don't really turn the wheel—the horizon just kicks up at a 45-degree angle. It was the same at Monza.

BONDURANT: At Monza in '65, the banking there was so rough, my eyesight started fading. At the end of the second bank, my eyes would focus again. So I just stood on it, full throttle.

GRANT: Monza's banking was concrete, poured in sections, and some had sunk. You'd hit one, and the back end would shoot out. In order to keep my foot on the throttle, I had to [brace] it at an angle. We were bouncing off the ceiling. My helmet still has a whole bunch

Carroll Shelby gives a thumbs-up to the race-leading coupe at its Daytona debut (below left). The No. 14 car would fail to finish, due to a fire in the pits. Driver Dave MacDonald makes a nighttime pit stop en route to a GT class win at Sebring in 1964 (below).





of scratches in it.

BONDURANT: Whatever the car did, you just adapted to it anyway.

GRANT: Redline in fourth gear—it felt like a small Cessna just before takeoff.

BONDURANT: At Le Mans in '64, we were leading the GT class, passing every GTO. Around 4:00 a.m. Sunday, Gurney came in, and we discovered a crack in the oil cooler. We had to lower revs by 500 rpm. We finished fourth overall and won GT. Carroll always believed that without the cooler incident, Dan and I would have won Le Mans in 1964.

BROCK: Gurney lapped at 3:56.1, the fastest GT lap ever at Le Mans.

We knew almost from the start that the coupe was special—much better than anybody expected. It was a lot of fun to drive.

BONDURANT: The way the French treated us, you'd have thought we won the whole race.

BROCK: Sebring in '64 was pivotal—the first win, proving we were faster than the Ferraris. Ray Geddes, our champion at Ford, convinced management to budget Europe for that year. We would have won that, except Enzo had the final race canceled. Then Geddes figured a way to keep the coupes in Europe in '65 by “lending” them to [British Ford team] Alan Mann. Mann

sold all their Ford rally-team gear to finance the season.

GRANT: By that point, Ford had told Shelby to concentrate on the Ford GT40. So they sent myself and Bondurant.

BROCK: The whole Daytona project, as a design study, was finished. Mann just ran the cars as is.

CHANCE: What [caused] hurt feelings was—all of a sudden, the Cobras were yesterday's news when the





*You can chuck it. You can wrestle it. You can tackle
the car down to the corner, sloppy and free...
You can also drive it like the classicists, slow hands
on that thin wooden wheel, and it works.
Balletic. But Jesus, it's less fun.*



The No. 12 Daytona driven by Allen Grant and Ed Leslie speeds through the flooded course at the 12 Hours of Sebring in 1965. Bob Bondurant and Jo Schlesser nabbed the class win and fourth overall in another Daytona Coupe.

GT40s [started winning]. It was just pragmatic, because Ford was payin' the bills, and the Fairlaners said, "We don't give a shit about that."

BROCK: Miles was convinced the Daytonas were faster than the GT40s, which still lacked development. He secretly built up a Daytona with GT40 brakes and engine for testing, but Remington discovered the plot. The politics . . . Ford only wanted the GT40 to win.

CHANCE: Carroll kind of floated along with the deal. That was one of the giant problems between Carroll and Peter. So now everybody's pissed, because they're dropping the Daytona like it's nothing. But in Europe in '65, they were winning hands down.

SUMMIT POINT, 2015: You can chuck it. You can wrestle it, and if you're feeling saucy, you can tackle the car down to the corner, sloppy and free, without losing much speed. You can also drive it like the classicists, slow hands on that thin wooden wheel, and it works. Balletic. But Jesus, it's less fun.

Above all, it's honest. There's so much grip, you need the revs way up if you want to steer it with your right foot. A gentle wiggle from the back end under hard braking. If it understeers in slow corners, it's because you did something wrong—the front suspension is basically just a leaf spring and kingpins, but it works amazingly well. The wheel gets heavy when the nose is sliding, always talking. And if the rear is going to move,

the wheel gets light, and you correct, and it comes back.

The sensations are gobsmacking. The long, graceful hood, always leading the way. The setting sun gets in my eyes in a slow corner, the middle of a second-gear slide, and I instinctively pull a hand off the wheel to block it. A swirl of cockpit dust lights up in the glare. The car leaps over the hump on Shenandoah's back straight and lands a little crooked, but friendly. The engine is just torque, hammering, long-legged Detroit.

Of course it won everything—it's a Cobra with the Cobra's main problem obliterated. After five minutes, I have zero doubt that one would carry me through a brawl at Le Mans or anywhere else.



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Grabbing fourth on the front straight, I am suddenly struck by an inexplicable need to know what this car feels like at 180 mph. —SS

BONDURANT: When we got the coupes the second year, they were used cars. Carroll said, “You’re the number-one driver, and you’re going back over there.” So I arrived at the airport, and Mann said, “I’m English, and I have the two best English drivers in the world. You’ll be number three, but you’ll never win.”

GRANT: Bob and I got into a very, very adversarial relationship with Alan Mann.

BONDURANT: At Monza in ’65, I was five seconds quicker than [Mann’s] English drivers. Allen was three seconds quicker. We got a great start and were way ahead. The guys running the pits leaned over the wall—slow down!

GRANT: We were co-drivers there. And of course, we wanted to win ourselves.

BONDURANT: It was ridiculous. I was in fourth gear, downshifting to third past the pits. As soon as I was out of sight, I’d go flat out again. We ran the whole race that way. That evening, we were meeting in the bar, and [Mann driver] Jack Sears came up to me. He said, “How come you didn’t wait for

me?” And I said, “I beg your pardon?”

GRANT: We won at Monza.

BONDURANT: The only race I didn’t win was Spa, solo, with John Whitmore solo. Whitmore and I had a good race going on, and we came up behind a guy in a Cobra roadster. Whitmore never even lifted. He hit that guy *so* hard. I couldn’t get out of the way quick enough and damaged a front fender.

NOTE: Five coupes entered Le Mans in June of 1965; only one finished. Reims was next, followed by the season ender in Sicily. A Reims win would clinch the championship.

A handful of guys, under half a dozen, won the first world manufacturers' championship for this country.



BROCK: What I remember most about Reims were the pits. They were very old, small . . . ancient concrete.

CHANCE: All those places were like dungeons compared to today.

BROCK: The straightaway in front was a two-lane highway. The noise was incredible. The cars were well over 160 mph when they passed.

AGAPIOU: At Reims, when the Whitmore/Sears car came in with engine trouble, Alan said, "I want you guys to look like you're working on this car. I'm going to hold it in the pits until the race is almost over, then send it back out to

finish." [In case Bondurant didn't, for the points.] We pulled the pan off and the rod out, because it was just hanging there. We put two bearing caps on the crank and said, "Let's run it." Alan was astounded, and the car finished the race on seven cylinders. It ran most of the race in that condition.

NOTE: When the checker fell at Reims, at 11:00 a.m. on July 4, 1965, the two Daytonas entered were the only cars in their class still running. Carroll Shelby was in America at the time, involved in other projects. Most of his team was not in France.

CHANCE: The Daytonas were yesterday's news—sort of an afterthought. And they win the world's championship! The first the United States ever won!

BROCK: The victory party was at a hotel in downtown Reims. It was sensational.

1966: SHUTDOWN

The coupe's '65 season ended with little fanfare, Shelby consumed by the GT40 and Ford's obsession with beating Ferrari at Le Mans. Brock had been working on the so-called Super Coupe, a closed version of the 427 Cobra, but funding dried up, and the car went uncompleted. In 1966, the six finished coupes were offered at Shelby American's famous "garage sale," \$24,000 for the lot. Like GTOs, each is now worth double-digit millions.

BROCK: Shelby was done. He didn't want anything to do with these things. He thought they were . . . That's just the way he was. Hard to explain.

CHANCE: The championship was a consequence of [Ford's] disinterest in the cars. It was just Henry's ego trip that he and Enzo were now at war. You've probably heard the story—the coupes that

went to Europe were left at Alan Mann's for months. And he said, "Look, I'm gonna dump these things in the ocean if you don't come and get 'em." That's how little effort was put in.

BROCK: There wasn't time for development, because by the time that would've happened, the coupe was over and done. As a designer, I just see all the things that didn't work. If it wasn't broke, we didn't fix it. I just wanted to fix it.

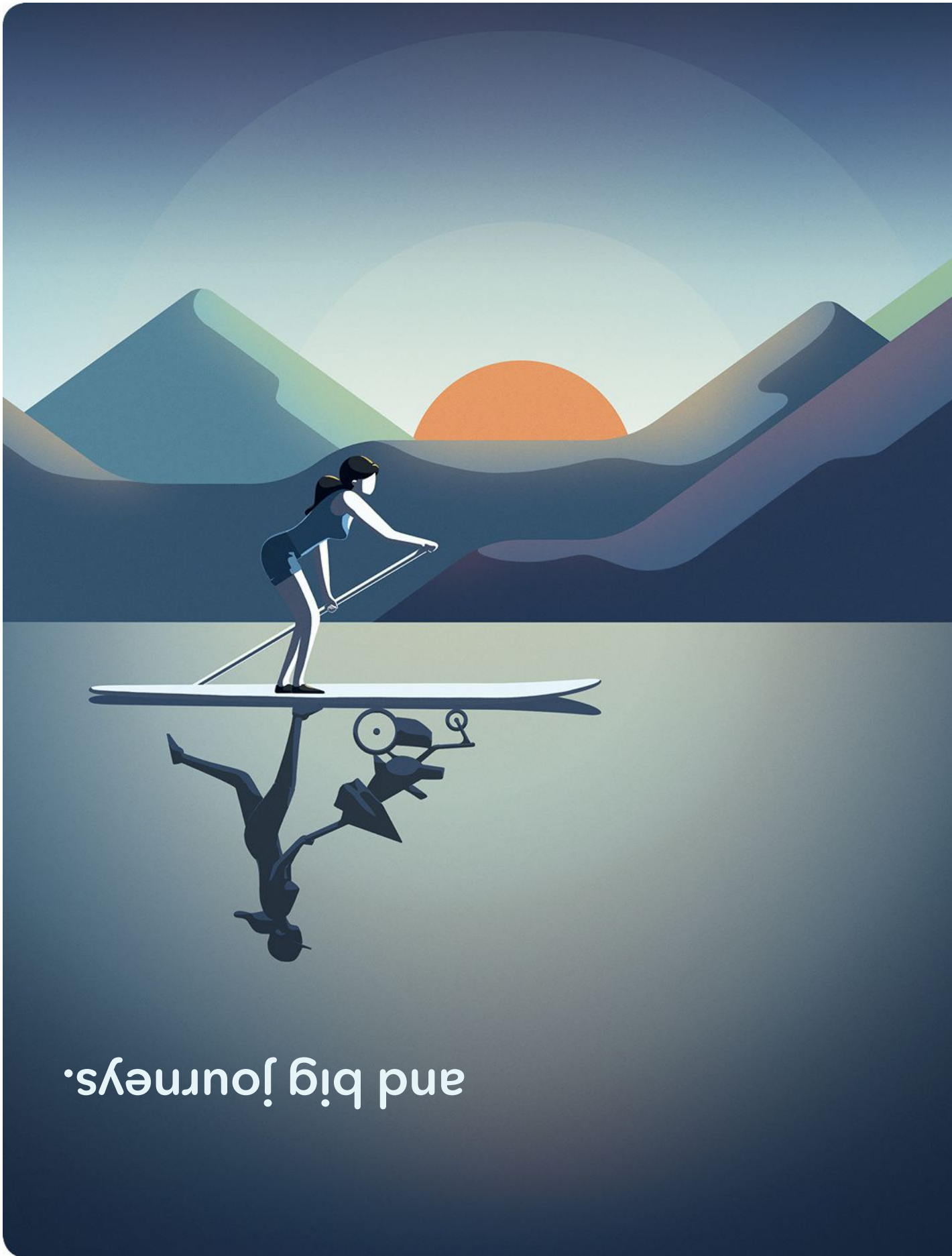
CHANCE: Peter Brock, John Ohlsen, Ken Miles, and [mechanic John] "Granny" Collins, they were the guys who built that car, and they deserve all the credit in the world. You can hear the affection that Pete has for them. A handful of guys, under half a dozen, won the world manufacturers' championship for this country.

SHELBY: Ford's race car was the Ford GT, and that's where most of the money went. The Daytona Coupe was ours.

SUMMIT POINT, 2015: We can be brilliant, the human race. But also very stupid. I wouldn't trade the safety advancements of a modern competition car for all the Nomex in Europe, but there is something here that we've lost. Undeniably walked away from. Something sublime and raw that we're never getting back.

And I'd be lying if I didn't say that there is a tiny, embarrassingly Luddite part of me that wishes everything since had never happened. That this had been the final stroke of an art form, race cars never evolving further. And that they still ran Le Mans and old Spa and old Reims with loud things that were graceful and brutal and risky and thin. That it was possible for a handful of clever guys in a garage in Southern California to throw caution aside, take on that world, and win.

We got a moment, though. An instant of that light, from a bunch of hometown upstarts. Ours. ■



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THE DESIGN ISSUE | PRESENT

10 MOST BEAUTIFUL CARS

LONGTIME R&T CONTRIBUTOR AND
AUTOMOTIVE AESTHETE JEFF ZWART CHOOSES
HIS FAVORITE CARS OF THE 21ST CENTURY.

JEFF ZWART'S INSTAGRAM PROFILE (@ZWART) describes him as a film director, racer, and photographer. We'd describe him as a renaissance man of automotive enthusiasm. Over the past four decades, Zwart has made his living from a variety of disciplines, all with a single common thread: harmonizing fast and pretty.

His interest in cars and racing started in 1964. Zwart's father brought home a brand-new Porsche 356C and announced he and a young Jeff would take it to the Indy 500. "I came away hooked on racing," Zwart recalls, "and I was also pretty hooked on Porsches."

Sixteen years later, after graduating from Art Center College of Design, he was shooting for *Road & Track*. "The magazine that influenced me the most growing up was also the one that gave me my first assignment." If you have a favorite 1980s *R&T* cover, it probably came off Zwart's film roll.

Photography led to racing, which led to rallying. Zwart won the Open Class National Championship in 1990; this year, he took his eighth class win at Pikes Peak driving a turbo 911 GT3 Cup car. In between, he traveled the world directing TV commercials, spearheaded *Forza Motorsport*'s viral ad campaign, and consulted for Ron Howard on *Rush*.

Zwart's work shows us sun-drenched days at Amelia Island and neon nights at Daytona. Unobtanium-grade sheetmetal, race and road, modern and vintage. He makes it all feel intimate, these moments, because he appreciates the balance of form and function, the relationship between design and beauty. He knows what pleases the eye. Who better, then, to curate our list of the 10 Most Beautiful Cars of the Century?

FORD GT "The car was designed and built based on the rules of a racing-series governing body, yet it will be a road car. Look at the way the air is managed over the bodywork, then look at the cabin space—it's all built to these rules, but it's absolutely beautiful. Stunning but purposeful. And I love the fact that Ford is back in that moment it enjoyed in the Sixties."







CADILLAC: ROBERT KERIAN; BMW: OLIVER HIRTENFELDER



ALFA ROMEO 8C COMPETIZIONE

"The 8C reminded me of Zagato-bodied Alfa Romeos. They have extra bumps, extra shapes that are so beautiful. The moment the 8C came out as a show car, it hit you. It was so sexy, so organically beautiful. It had a nostalgic purity that simply didn't exist in any other contemporary car."

CADILLAC CTS-V WAGON

"Cadillac's wagon was brutal. It was out there to kick ass and look good. At the same time, it wasn't shy about being a station wagon. It ticked every box right away."

BMW i8 "Just because cars are laden with new technology, they don't have to look strange or boring. They can be transcending in terms of design and feel and driving experience."



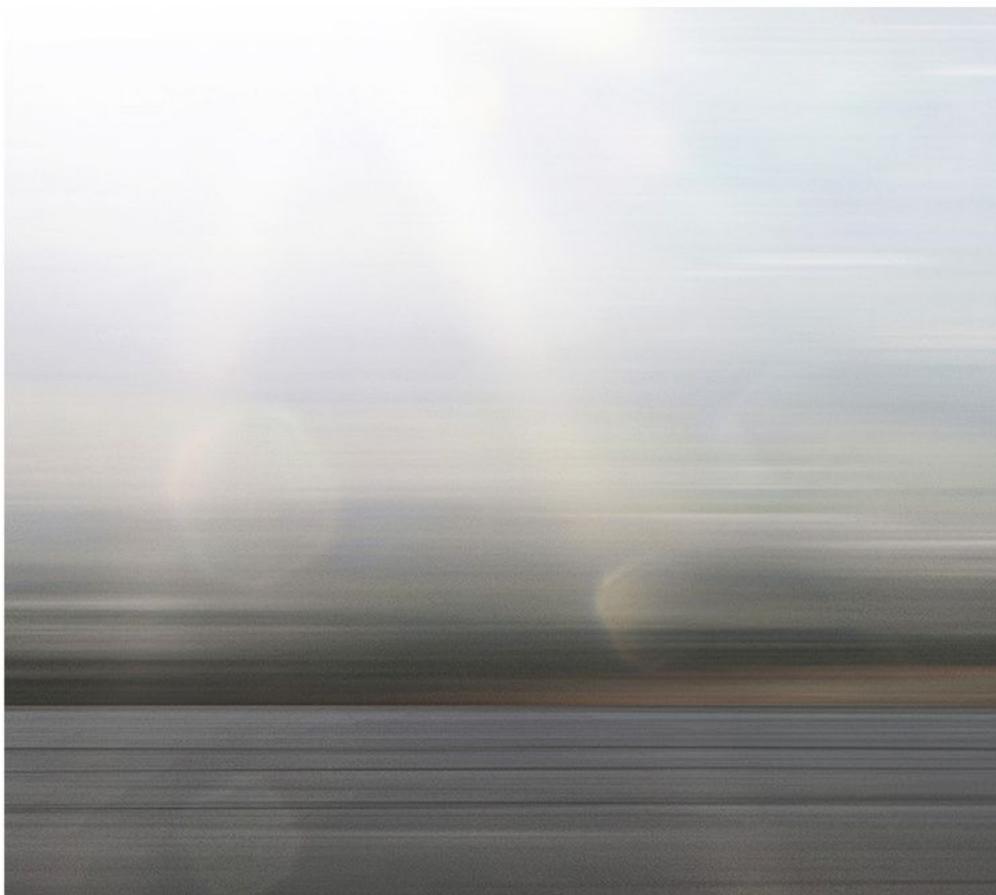


RANGE ROVER EVOQUE

"It was such a big jump—it was controversial. People said it didn't feel like a Range Rover, that it didn't have the qualities the other models do.

But I thought it was the perfect statement for Range Rover to make.

The brand suddenly felt contemporary in a big way."





JAGUAR F-TYPE COUPE

"A pretty, pretty car. It had so much to do with Jaguar's past, so much about its future, all combined in one."





BENTLEY: MATT HOWELL; FERRARI: HIDEHIKO ISHIURA; AUDI: ANDREW TRAHAN



BENTLEY SPEED 8 LE MANS PROTOTYPE

"It was a visual interpretation of speed, as if its only designer had been the wind. It was like you had taken the front end of the car in your left hand, the back end in your right, then pulled it and pulled it until you let go. And it stayed there."

FERRARI P4/5 COMPETIZIONE

"I'm really into cars that can be raced but still driven on the street. It was a bold move to take a Ferrari and make it more beautiful, more purposeful."



AUDI TT

"It's as pure a form as anything that can come out of a factory. The shape was uninfluenced by bumpers and by so many of the things that dictate how cars look these days. Its arcing roofline had a retro feel but was very modern and contemporary."



PORSCHE 918 SPYDER “The 918 is so different from any other Porsche being produced now. When you look at the details and their purpose and functionality, it’s amazing how everything is blended. This is going to be a moment in Porsche’s history that validates other thinking. It will motivate future design processes. The 918 will become an important car but also a timeless car.” PHOTOGRAPH BY MARC URBANO



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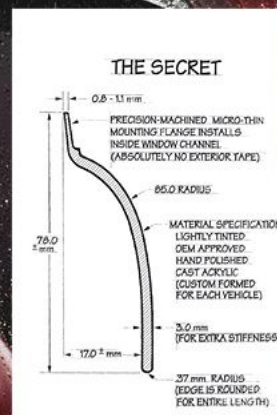
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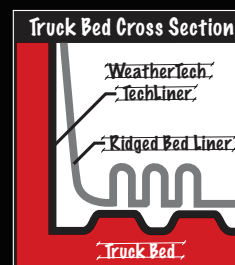
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THE DESIGN ISSUE | FUTURE

TOMORROWLAND

FROM LOS ANGELES TO SEATTLE IN A BMW i8
TO FIND OUT WHAT THE FUTURE HOLDS.

BY JACK BARUTH | PHOTOGRAPHY BY EVAN KLEIN





THE SKY ABOVE THE PORT was the color of television, tuned to a dead channel. Sound familiar? It's the opening line of *Neuromancer*, William Gibson's 1984 debut novel that forever changed the way we would imagine the future. Gibson replaced the squeaky-clean spaceships and passionately optimistic humanism of *Star Trek* with a desperate, gritty techno-nightmare in which mankind's nature had spectacularly failed to mature in lockstep with mankind's knowledge. *Neuromancer* made *Blade Runner* look like a kids' cartoon. Even if you've never read the book, you've felt its influence in a hundred depictions of the future in movies and on television.

How ironic, then, that on the day I picked up this glossy-white BMW i8—the hybrid, \$137,000 sports car that prioritizes fuel economy over speed—outside LAX, the sky above the airport was the color of television, tuned to a dead channel. A modern LCD television, mind you, with a bright-blue screen indicating there's nothing connected. In 2015, the color of nothing is bright blue. As was the sky, featureless and azure-cheerful, saying nothing in particular but communicating that bland California prosperous entitlement that manifests in everything from omnipresent yoga wear to the predominance of brand-new, wedge-shaped Toyota hybrids in traffic.

Here's another Gibson quote for you: "The future is already here. It's just not evenly distributed." Which is why I came to California to drive the i8. I'm a native New Yorker and a proud Ohio resident, but I have to admit that when it comes to the future, it's mostly distributed to the West Coast. This is where the future is dreamed, designed, and realized. And it's where Richard Kim, the man who designed the i8 and its sibling, the boxy, cheerful-looking i3, has built his dream home.

My plan was simple: Along with a photography team, I would take a West Coast road trip from design to construction. After

interviewing Kim at his home and finding out how his particular vision of the future informed the BMW "i" design aesthetic, we would travel up the coast some 1350 miles to Woodinville, Washington, via every spaghetti-twisted road available. There, I hoped to gain a little insight into the i8's carbon-fiber "Life module" passenger compartment by watching the crew at RainSong Guitars assemble sheets of the material into musical instruments. By the end of the trip, I wanted to understand BMW's three-cylinder supercoupe inside and out.

RICHARD KIM AND I HAVE ONE THING IN COMMON, besides our transparent-framed glasses: We both have triangle-shaped Isamu Noguchi coffee tables in our living rooms. The design dates to 1945 but remains modern. Across our shared table, I suggest to Kim that there are competing visions of the future. There's the flying-car, warp-speed, spandex-jackets-for-everyone vision, as seen on *The Jetsons*. Call that the future of the past, as expressed by the Noguchi table. We don't believe in it anymore. Nowadays, we think of the future as a place where resources will dwindle and population will surge and icebergs will melt.

Kim's more diplomatic. "Think of it as private and social," he proposes, and offers the two BMW "i" cars as representatives. The all-electric i3 city car, his own example of which sits outside plugged into a charger, is that social vision. Space-efficient. Sustainable, built from renewable materials and proud of it. The dashboard is bent wood like an Eames chair; the door panels are recycled cloth. Big windows, so the barrier between outside and inside is lessened. He points to the massive, uninterrupted sweeps of glass on both the front and back of his home—there's very little sensation of being closed in. People walking by can see his furniture, see his wife playing the piano.

The i8, on the other hand, is a private vision. Low, sleek, wide. A two-plus-two in the classic sense, with just enough room in

Designer Richard Kim talks BMWs with the author.





the back seat for my own RainSong carbon-fiber guitar. The i8's bigger than the i3, but it's not spacious. Instead, it uses that space to create performance. There are two separate but cooperative drive-trains. Ahead of the driver, a 129-hp electric motor is connected only to the front wheels. Behind, a tech-packed, TwinPower turbocharged three-cylinder manages to extract 228 hp from 1.5 liters. It drives the rear wheels through a six-speed automatic.

Kim's careful to remind me that there is more than one way to define performance: "The i3 has urban performance, efficiency where it's appropriate." Sure, Richard. I'm more interested in whether the i8 can use its combined 357 horses to pound the road into submission the way the last BMW coupe to carry the number eight did. Remember that 850CSi? It had a 372-hp 12-cylinder engine that sounded like Apollo's chariot, and it looked like every schoolboy's idea of the ultimate Bimmer.

The i8, however, brings unprecedented visual drama. It has dihedral doors like the McLaren F1; "floating" pillars that cause people on the street to literally allow their mouths to hang open; a low nose that suggests the 850CSi and the original, Paul Bracq-styled M1 supercar all at once; and outrageous proportions that have to be seen in traffic to be fully appreciated.

It's far from a lazy design. Kim calls my attention to the plan view of the car, or how it looks from above. "There's contouring there, tapering front and rear. It communicates speed, dynamic intent." Does it ever. With a modest nod, Kim allows as to how his home, as well, has significant contouring in plan view.

Two different visions of the automotive future visit the home of midcentury modern design icon Richard Neutra.

I show Kim my RainSong, and he approvingly notes the clear-finished carbon-fiber construction. "It's not pretending to be something it's not. Authenticity in materials is important," he says. His home is covered in a unique steel that is designed to rust evenly. Once it has oxidized a bit, that surface layer prevents any further degradation. Authentic. Effective. True to the characteristics of the material.

Kim cites another Richard—the spectacularly inventive Richard Neutra—as a personal inspiration, so on a whim, we take my i8 and Kim's i3 to visit the home and studio on Silver Lake Boulevard where Neutra lived and worked for much of his career. Amazingly, there's room for both cars right out front, and for just a few moments, Kim and I exist together in a sort of timeless Modern-with-a-capital-M space, facing Neutra's uncompromising angles with these cars of the future behind us. One suspects that if Neutra himself, who died in 1970, were

to magically appear next to us, he would appreciate the scene. He'd like the i8. It's unashamed to be futuristic, unabashed about its retro-cool surfacing and spaceship swoopiness.

I'd cheerfully discuss design and architecture with Kim all day, but he has his own future to think of; he's putting in 90 hours a week on an entirely new transportation concept, and he needs to get to the office. Which leaves me the evening free, so I take the i8 back to a hotel in Beverly Hills. The valet offers to charge the car for me. He knows what it is, and he approves.

That should be the end of the night. We have a long day of photography tomorrow. Instead, I

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6-SPEED AUTOMATIC, RWD

PEAK SYSTEM OUTPUT 357 HP

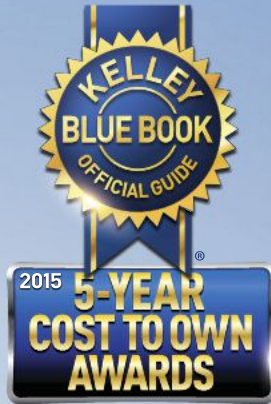
WEIGHT 3380 LB

0-60 MPH 3.8 SEC

TOP SPEED 155 MPH

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impulsively call for the i8 an hour later, swing up the door, enjoy the deliberately dramatic whirring noise it makes when you press the start button, and take in the blue lighting all around me, from the glowing footwells to the curving neonlike accents on the dash. At night, the LCDs for the climate control, which glow bright white in the day, turn a shade of orange that will be immediately familiar to current BMW owners.

As you'd expect, the i8 has multiple modes of operation. Around L.A., the all-electric modes achieve about 15 miles of completely silent driving. Assuming you, too, have a full charge from the hotel valet or your own home charging station, BMW claims the i8's electric range reaches 22 miles. The default Comfort mode runs on the batteries until you ask for more acceleration or speed than they can provide, at which point the three-cylinder will rumble to life behind you and combine with the front motor to kick the 3380-pound i8 forward with about a 335i's worth of vigor. It doesn't happen immediately, so it's best to plan at least a second or so ahead in traffic.

Eco Pro mutes the gasoline engine's response a bit and puts the air-conditioning into eco mode, in which it is remarkably ineffective. Sport mode turns the gauges on the dash from blue to red, fires up the gas engine for the duration, and sharpens throttle response. Brake-energy recovery is set to maximum in Sport mode, but we found that regeneration is more effective in Eco Pro.

As I dally down Sunset Boulevard, some kid in a late-model Infiniti pulls a high-speed flyby on my eco-Batmobile. I see him in the rearview, select Sport, and time the lunge from the combined motors just right to match his speed almost immediately with no warning. The look on his face is priceless. It's like I warped next to him.

I switch back to Eco Pro so I can conserve my energy, and then I arrive at the Chateau Marmont, where this \$137,000 hybrid has an effect on even the most jaded members of the Hollywood scene. Suffice it to say that it's much better than a conventional supercar, because you can play the global-warming angle. "Oh, baby, I could have had a Ferrari, but then I think about what it would do to the environment."

The next morning, freshly charged again

Through the redwoods and along the Pacific, futuristic grand touring in the i8.

on the Beverly Hills Sofitel's dime, I put the i8 into EV mode and let it silently whisk me 10 miles to meet the photography team. There's a great spot under a freeway that looks like it's straight out of a hundred different movies, because it is. But there's also a homeless encampment there. The men living in their tents are quiet and respectful of the i8, but it feels all too reminiscent of William Gibson's dystopia: the desperately poor and the eco-conscious wealthy, jammed together in space but separated by immovable barriers of economic stagnation and social privilege. I am glad when we split and head for a local exotic-car meet.

If I'd doubted the i8's street credentials before pulling up at this "cars and coffee," I certainly didn't doubt them five minutes after my arrival. The fact that even the combined power of the BMW's two drivetrains can't bring it within striking distance of the speed of a conventional supercar doesn't matter to the assembled crowd. They like the doors, they like the stance of the thing, they like the contrast of the blue stitching and seatbelts on the light-gray leather. It's a new kind of supercar, one that trades raw speed for a measure of ecological awareness. And even the guys in their Chevelles with grease under their fingernails can dig it.

On the long drag through inland California to San Francisco, the i8's trip computer displays 40 mpg regardless of velocity. That's good, because the gas tank can't quite take 10 gallons even when it's claiming to be empty. The stereo system is clear, with good staging and deep bass, assisted by the low wind noise and lack of mechanical cacophony. If you have the battery power stored to do it, the i8 will cruise on the electric motor at 70 mph for a few miles. Too bad switching the gas motor on and off isn't a bit more seamless at speed.

This is a good car in which to cover distance. Quiet, rides well, all the controls are easy to operate. But I'd gladly exchange the old-school radio volume knob and preset buttons, which seem lifted directly from a '77 320i, for a larger center screen or even a storage cubby of some sort. Another minor annoyance: If you plug a phone charger into the power socket in the center console, you can't close it. That's no doubt a consequence of the packaging. This car is wrapped around the mechanicals like an Adrian Newey-penned Formula 1 racer. No slack.





*The i8 brings an unprecedented level of visual drama.
It has outrageous proportions that have to be seen in traffic to be fully appreciated.*

OFF U.S. 101 OUTSIDE NIPOMO, THERE'S A SWAP MEET. I buy a rare pressing of a Steely Dan record, only to learn a thousand miles later that it had warped in the i8's cargo compartment. This deep but narrow well tucked between the engine and the rear bumper absorbs a lot of heat from the turbo and the sun alike. If you're shopping for ice cream, keep it up front.

During a brief trip through San Francisco's Chinatown, the i8 doesn't like being stopped on steep hills. The hybrid system is subject to about a one-foot rollback before everything wakes up and proceeds forward again. The solution is to put it in Sport mode, which keeps the gas motor on and immediately ready to roll forward, should you ever find yourself going the wrong way on Lombard Street.

San Francisco loves the i8, and indeed the only time I find myself facing another one in traffic is on the way over the Golden Gate Bridge heading to the beaches. But with the prospect of a run up the coast to Portland ahead, I can't bring myself to stay in the city long. When the sun rises on Sunday, we're deep in redwood country. On these wide two-lanes, with their fast sweepers and plenty of elevation change, the i8 extracts considerable grip from the Bridgestone Potenza tires. By the time you hear noise from any tread, you're already moving at the same kind of pace you'd feel good about extracting from a Porsche Boxster or BMW Z4.

You will, however, want to make sure you're in Sport. Traveling at elevated velocities and cornering levels in Comfort mode upsets the i8 a bit; in particular, it acts like it cuts power to

the outside wheel when a quick boot out of an uphill corner is requested. This isn't a Prius, you know. It doesn't have a Synergy Drive that sends all inputs through a single set of drive wheels. It's more of a spiritual successor to the Mosler TwinStar, that one-off Eldorado with independent V-8s powering each end of the car, and it's a wonder how well the arrangement works in daily use. When you really want to hustle, just choose Sport and let the blown triple do the work.

At speeds below directly-to-jail, though, the i8 offers a lovely side benefit. You can brake down hills and in long corners using just the regeneration of the electric motors. All of a sudden, riding the brake on a thousand-foot descent isn't foolhardy, it's ecologically admirable! And you can use the energy you gain for a quick sprint up the next hill. Really, I could love the i8 just for that feature.

I wouldn't be alone in that. There's something about this car that transcends conventional car-guy class divisions. At the Black Lightning Motorcycle Cafe in Eureka, California, a waitress who could be a stunt double for actress Olivia Wilde asks for her picture in the car, while a grizzled, full-dresser Harley rider nods appreciatively. On the way out of town, a lady on a vintage Honda Gold Wing with a sidecar cuts across a few lanes to get a better look. Outside a Subway sandwich shop, a young kid with dreadlocks reminds us that the i8 has laser headlights. Ours doesn't, as they're illegal stateside. We'll have to settle for LEDs. But they work. If ever there was a feature to spoil you for other cars, it's the way the BMW lights up the road through fog.

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When we reach Portland, we stop to visit friends at See See Motor Coffee. A barista with full-sleeve tattoos and a custom van from the Seventies declares the i8 to be “way cool,” and who are we to disagree? Fully caffeinated, we’re back on the road headed for Woodinville, a few miles outside Seattle proper and just a couple hours away. It’s where they make RainSong guitars. I’ve traveled around the country with my carbon-fiber jumbo RainSong acoustic. It’s been inspected more than 60 times by the TSA, and the carrying case has been cracked and split in a half dozen places by airline baggage handlers, but it always stays in tune and is impervious to the elements.

When we arrive, RainSong’s sales manager, Dave Coram, is standing next to his BMW 530xi wagon. He’s eager to see the i8’s Life module, the carbon-fiber passenger compartment that helps keep the i8’s weight to only 3380 pounds. We raise the doors and there it is: the full frame of the module, rendered in gray carbon fiber. Coram brings out a few samples of carbon-fiber weave. Each thread is thin, insubstantial. But it’s tough to snap. You weave a few million of them together, and you really have something.

As I watch RainSong’s small team of employees take the fiber mats out of a deep freezer (it’s necessary to keep them from curing, apparently) and fashion them into various guitar shapes, it’s almost impossible for me to imagine that an entire passenger compartment could be built the same way. At that moment, I understand just how much of an engineering achievement the i8 is. It’s light, it’s stiff, it averaged 35 mpg in my hands despite my treating it like I would an M3 in the same circumstances most of the time. It combines multiple technological miracles, from the high-power three-cylinder to the Life module to the brilliant headlights, in a form that you can enjoy for the tech appeal or for the styling or just for the way it swallows freeway miles.

Viewed in the context of what it must surely cost to build, its interstellar curb appeal, and its trouble-free operation, the i8 is that rarest of things in the over-\$100,000 automotive market: a smashing bargain. No, it’s not particularly fast, but neither was the original M1, and you can check any recent auction results for history’s (overwhelmingly positive) verdict on that sensible-shoe supercar’s relatively modest power and pace.

I think what really impresses me about the car, however, is that it represents a thoroughly positive view of the future. That we won’t be huddling underground or wearing shapeless gray clothing or driving phone-booth transportation boxes. That there’s room for style and speed and joie de vivre in the years to come. It’s the future I was promised as a child, and if the i8 doesn’t actually fly, it at least looks like it could. Behind the wheel of the i8, sailing down the road back to Seattle in blissful electric silence, I’m reminded of another Gibson quote: “The past is past, the future unformed. There is only the moment, and that is where he prefers to be.” ■

It represents the thoroughly positive view of the future I was promised as a child...and if the i8 doesn't actually fly, it at least looks like it could.







THE DESIGN ISSUE | THE DISCUSSION

MAN OF THE WORLD

**MCLAREN DESIGN CHIEF FRANK STEPHENSON TALKS TO
CHRIS CHILTON ABOUT SUPERCARS, THE FUTURE, AND UNUSUAL PET PROJECTS.**

FROM THE TWIN SPOILERS on Ford's Escort RS Cosworth to the award-winning Mini Cooper to the upcoming McLaren 675 Longtail, Frank Stephenson has gone from strength to unorthodox strength. We visited the McLaren design director at the automaker's ultramodern headquarters in Woking, England, then hit the back roads around Surrey and Ascot in a 650S Spider, discussing everything from the MP4-12C's design—which Stephenson acknowledged was “ho-hum” and likened to a fit athlete wearing a sack—to his current unusual personal project.

What was your brief for the new 570S, the Sports Series car?

The hypercar market is haute couture. You go all out and you don't worry about polarizing opinion. You're not going to please everybody. Which is good, because the car has to represent everything you can do. No buyer in that segment wants to see somebody else wearing the same suit or dress at the party.

The bandwidth of the design, of the brief, for the Sport Series was a lot wider. The Sport Series is like an athlete who's good at the decathlon. Where our other cars are very specialized at what they do, this one has to be good at everything it does to be usable every day.

It's almost like we started on the inside out. We looked at visibility, comfort, storage capabilities. Usability had to be the first priority. The idea was to make it do everything the 911 can do, but better. And it has to appeal equally to men and women.

What do you say to people who complain that all McLarens now look the same?

I firmly believe the worst thing you can do is to build in predictability. Everything that a designer brings out should have a wow factor. With what we're working on now [the P14], we're even shocking ourselves, because

we're thinking, *How can we get away with this?* Our next designs will be introducing something, not just the wow factor, but something that makes you think, *How did they do that?* That's why even the P1 will eventually start to look dated.

Moving forward, what are the technologies that will enable car design to change?

Electronics and materials. You can do incredible things with glass, curving and shaping it, and we're working with a composite called CarbonMide. We're looking at extremely thin A-pillars and getting rid of B-pillars altogether. Moving to laser headlamps opens new possibilities and more design freedom, because the actual lighting unit on a laser headlamp is so much smaller.

What are the key bits of design we'll see on all McLarens?

There's the low cowl, and we'll always be mid-engined, so they are always going to have a very cab-forward look. The dihedral doors will probably be with us for quite a time to come, but the P1's dual-hinge system allows the door to open farther over the car. That has a lot of potential.

McLaren's Special Operations division built the X-1, a radically rebodied art deco 12C, for a client in 2012. Is that as weird as requests get?

We've had customers with P1s who want to sit in the middle of the car, who want an F1 engine in the back. We get

requests from people for whom money is the least of their worries. When you offer people those possibilities, it's like being a kid.

Autonomous driving is the big talking point in the industry. Does that technology have a place at McLaren?

Autonomous driving is the last thing you want from a sports car, but imagine a track day. The car knows the best line, the speed, the gears. It teaches you in those first few laps. You're feeling the input from the car. After five laps, you can give it a go yourself.

Do you think legislation lags too far behind technology? Is that a frustration?

It's not, because it creates a challenge that makes our job so fascinating. Designers make excuses and blame legislation, but you find a way around problems.

You had a pretty esoteric upbringing. Do you think that had an impact on your work?

I grew up in Morocco, in northern Africa. I've always spoken to my mother in Spanish, because she's Spanish, but I spoke to my brother in French, and I spoke Arabic when I was with the local kids. When I was six, I went to an international school and learned English, and then I went to Istanbul. It definitely had a bearing. I grew up with donkeys! It gives you a wide view of society, customs, everything. My father was Scandinavian, a numbers guy, very rigid

and technical. My mother was really creative. It was like science and art, and with car design, you have to combine the two.

People might be aware that you designed the first new Mini and the Fiat 500, in addition to being Ferrari's first in-house design director. But you also designed the original BMW X5.

With the X5, BMW wanted to see a full-size clay model for a BMW SUV in six weeks, but you're not allowed to work on Sundays in Germany. So Chris [Bangle, BMW design chief] sent me to Turin. They pick me up from the airport—I didn't speak Italian—and they take me to the place where I'm going to build the car. There are these three old Italian guys in there. I ask, "Are these guys going to work 18 hours a day, seven days a week, for the next six weeks? Can they maintain that pace?" And the main guy looks at me and says, "Don't worry, these are the same three men who did the Miura." They were absolutely amazing.

What other car companies do you admire right now?

I like companies that take risks. I like what Citroën is doing after a few blasé years. It's exciting wondering what the next Citroën is going to look like. Great design is about making people happy and proud to own things.

Do you like to mess with cars away from work?

I have a Series 1 Jaguar XK-E coupe, but I was a motorcycle racer when I was younger, and I still ride. I have an incredible modified Ducati 1198 S with a titanium shock and carbon-fiber spring. The paintwork is by a guy who does F1 bodywork. Only the instruments and tires are stock. I can't take it to a track. It's too noisy. It idles at 108 decibels.

I'm also in the middle of modifying a Smart. The interior is completely stripped. Only the driver's seat is left. It's fitted with a turbocharged Suzuki Hayabusa engine with two periscope snorkels on the roof and big spoilers. McLaren has the Longtail. I'm calling this the Hightail. ■

The new Sport Series is McLaren's answer to the 911 Turbo and the Aston Martin Vantage.



THE FIRST DRIVE | 2015 ALFA ROMEO 4C SPIDER

MODENA MIRACLE

PEEL OFF THE ROOF OF THE 4C,
AND YOU HAVE A BETTER ALFA ROMEO.





BACK IN 2008, I FLEW TO ITALY TO DRIVE THE Alfa Romeo MiTo, a curious, front-drive subcompact that Alfa presented as a sibling to the expensive, beautiful, and rare Alfa 8C Competizione. Inviting American media to Milan was part of a ploy to convince us that Alfa Romeo, the troubled luxury arm of Fiat, not only had a future, but a future in America. A stretch, that, since the middling MiTo hatch offered little in driving dynamics, charm, or looks to suggest that Alfa Romeo had a chance against Audi or BMW. Or any other automotive luxury brand. A few months later, the economic meltdown assured that no one—save a few lucky 8C owners—would be parking a new Alfa in their American garage anytime soon. So last year, when Fiat Chrysler Automobiles introduced the 4C coupe, all sensuous curves and Italian lust, it was a tiny miracle wrought in carbon fiber, aluminum, and dreams.

This year brings us the 4C Spider, which is not only a worthy sibling to the hardtop 4C but also another chapter in Alfa Romeo's renaissance (which continues next year with the new Giulia sedan, targeting the BMW 3-series.) The Spider is not so much sibling, actually, as identical twin to the coupe. It has the same carbon-fiber monocoque tub married to aluminum front and rear subframes. It undergoes a similarly labor-intensive, six-week production process in Modena, Italy. The same 1.7-liter turbo four mounted midship frenetically sends 237 hp through the same six-speed dual-clutch. And, of course, it has the same incredible looks, worthy of a six-figure exotic, with sweeps and swells in all the right places in the plastic body panels.

Alfa Romeo 4C Spider

PRICE \$65,495

POWERTRAIN

1.7-LITER TURBO-CHARGED I-4, 237 HP, 258 LB-FT; RWD, 6-SPEED AUTOMATIC

WEIGHT 2500 LB

ON SALE NOW

There are some differences between the two 4C models. For both structural strength and aesthetics, the Spider's windshield frame is carbon fiber. A redesigned aluminum roll bar provides mounting points for the new painted-plastic engine cover, which replaces the coupe's glass hatch. The roll bar is sheathed in what Alfa calls a "halo," either in standard black plastic or optional carbon fiber. And sturdier upper-body brackets and an engine compartment crossbeam have been installed. Even with these changes, Alfa says the Spider weighs only 22 pounds more than the coupe, which weighed 2455 pounds in our last instrumented test. A miracle, indeed.

The 4C Spider is not a roadster in the Miata sense of flipping back a lightweight fabric roof and exposing the entire cabin to the sky. It's more of a targa-top 4C, but that's enough to transform the car. The coupe's cabin is a severe place, all dark surfaces and boomy powertrain resonance, but the boom and gloom disappear once you open the roof. To do so, you step outside, loosen some pins, roll up the fabric roof, stuff it into its special duffel bag, and wedge it into the tiny trunk behind the engine, where it takes up most of the space. This is either a ridiculous pain or a charmingly old-fashioned exercise in top-off motoring, depending on your mood. A carbon-fiber roof panel will be offered later



This is a synapse-firing sports car in the classic and best sense...with purity of purpose and a sensory experience that is the antithesis of most modern cars.

this year for \$3500; when removed, it must stay behind in your garage. Again, joy trumps efficiency.

When it's Spider time on California's Highway 1 south of Monterey, efficiency is the last thing you care about, but you might want to talk to your passenger. The wind is well managed, so conversation is possible, at least until you dip into the throttle and the shrill turbo whoosh and exhaust *rrrapp* muffle voices. (Another late option: an Akrapovic dual-mode exhaust with center-mounted tips, sure to keep your passenger busy texting rather than talking.) The Spider cabin gets standard leather seats, a welcome upgrade, because leather and carbon fiber go together like Campari and soda. The switchgear is still as unin-

tuitive and chintzy as in the coupe. A new Alpine head unit is an improvement over the coupe's Parrot stereo, even if it looks decidedly aftermarket. It has Bluetooth capability, and there are new padded slots between the seat bottoms and rocker panels to stash phones. Italians have their priorities. The slots will be added to the 2016 4C coupe.

So the Spider is essentially a 4C with the Ray-Bans and Copertone option package, and it has virtually no differences in dynamic performance compared with the coupe, which is both good and bad. Good: This is a synapse-firing sports car in the classic and best sense. It requires sacrifices from its driver and passenger in utility and comfort, but it compensates with purity



Carbon-fiber windshield frame can be complemented by a \$3500 carbon roof.

of purpose and a sensory experience that is the antithesis of most modern cars.

Bad: All of the coupe's deficiencies remain. The steering is still a serious weak point. At low speeds, it has all the accuracy of a John Deere lawn tractor, despite no power assistance. The 4C has tons of grip, but the lack of predictable feedback through the steering wheel prevents you from fully exploiting it. The turbo engine is peaky and unpredictable, the sweet spot in its boost curve often elusive. You really have to pay attention when you're hustling along two-lanes. Then again, you might say that's the allure of a real sports car.

After a morning spent trailing rental Sentras on Highway 1 from Monterey to Big Sur, I'm back at Mazda Raceway Laguna Seca for an afternoon of happy laps. This should be the 4C's natural habitat, where its light weight, low polar moment of inertia afforded by the mid-engine layout, big Brembo brakes, and

sharp chassis all come into play. It's also where you might succumb to the inevitable comparisons to the Porsche Boxster and Cayman, similarly priced cars that would feel perfect here or on any racetrack. Because in the 4C Spider, it's difficult to come out of Laguna Seca's corners in the right gear at the right revs, even with Dynamic mode engaged. Frequently, the 4C's potential is tantalizingly just outside your grasp, which is not a feeling you get in the mid-engine Porsches. Yet the power delivery when you do get the 4C's revs and gears right is potent, and I'll not soon forget the full-throttle blast uphill toward the Corkscrew.

Buying a Cayman or Boxster is predictable, practical, rational. When you go Italian, you're going with your emotions. Either 4C sibling will satisfy your lust for a semiaffordable Italian exotic. But since the 4C is inherently and proudly impractical, why not have the top-off option? Especially if you believe in miracles.

—JOE DEMATTO

THUMPER

WHEREIN AMG JUMPS THE SHARK.



LET'S START BY UNPACKING a philosophical question: What makes an AMG special? It's not squared exhaust tips or touring-car pedigree or plumes of tire smoke seeping into a gullwing cockpit. No, I think it's something tougher to quantify. It's the people at Affalterbach, the human beings, flesh and blood and ideas. The beating heart.

Their latest project is based on the GLE, which replaces the M-class later this year. The GLE rides on the same gargantuan, Alabama-built chassis underpinnings, but there's now a stiffer four-door-coupe body style, as well as plug-in hybrid and twin-turbo V-6 options. Most get four-wheel drive.

The AMG GLE63 S Coupe is the one you care about. It uses that neat new body shell—taller, longer, and wider than the base model, with a sleek, porpoise-like greenhouse. Think carnival-mirror CLS with a lift and gorged wheel arches. Even in coupe form, the GLE is a certifiable colossus: 5.6 feet tall, 6.6 feet wide, and more than 16 feet long, all riding on 22-inch wheels. To wit, its 577 hp and 561 lb-ft of torque come via a 5.5-liter twin-turbo V-8 run through a seven-speed automatic. Mercedes has heaped every electro-aid and beeping assist and configurable drive mode at its disposal onto the GLE63 S. If Daimler made a Voight-Kampff device, it'd be standard equipment.

Still, it's a tough sell. The cabin feels stiff and stodgy; the rear visibility could give a pillbox gunner flashbacks. Wind noise picks up at highway pace, building to a percussive interior warble at triple-digit speed. Steering feel? *Nein*. Just the sensation of a 10-pound dumbbell clamped across the flat-bottom wheel. This is a big-tire machine, 285s up front and 325s

out back, meaning tons of mechanical grip. But a massive footprint and tuned suspension can't touch BMW's torque-vectoring X6 M on winding stretches of blacktop. When you hit a straightaway, though . . .

Sweet fancy Moses is the GLE63 S fast. This thing is an absolute paint peeler, a runaway Schnellzug huffing 14.5 psi of boost. Peak power arrives at 5500 revs, but it's the torque riptide, in full effect from 1750 to 5250 rpm, that really gets you in the gut. Engineers also reworked the exhaust's center section for this application. The result is something primal and scornful, part straight-piped Chevy small-block, part dinosaur gargling peanut butter. Except louder.

The 5.5-liter is near the end of its production lifespan but compelling as ever here, all firepower and theater, exactly what an AMG should be. So I popped the hood and stared at that wonderful little placard: "Handcrafted by Kevin Zimmermann—Affalterbach, Germany." I'll take that, the GLE63's beating heart. The rest? Well, that's a different question entirely. —MAX PRINCE

Mercedes-AMG GLE63 S Coupe

PRICE \$110,225
POWERTRAIN
 5.5-LITER TWIN-
 TURBO V-8, 577 HP,
 561 LB-FT; AWD,
 7-SPEED AUTOMATIC
WEIGHT 5200 LB
0-60 MPH 4.2 SEC
TOP SPEED 155 MPH
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THE FIRST DRIVE | 2016 NISSAN MAXIMA

SHOT AT REDEMPTION

DOES THE EIGHTH-GEN MAXIMA RETAKE ITS FOUR-DOOR SPORTS-CAR CROWN?

TWENTY-FIVE YEARS AGO, the Maxima had cred: It was fast, fun, and a great value. Its “four-door sports car” tagline wasn’t a lie. Over time, though, as Nissan abandoned enthusiast models for big-selling commodity cars, its flagship sedan lost its mojo and gained a lackluster continuously variable transmission. When the seventh-generation Maxima debuted in 2009, Nissan hailed it as the return of the four-door sports car. Not so fast, we said. Despite that model’s appealing Coke-bottle styling and bump in horsepower, it drove like the jazzed-up Altima it was.

The all-new 2016 Maxima—lower, longer, lighter, stiffer, and more powerful—is a shot at redemption. There’s still a 3.5-liter V-6 between the fenders, making an additional 10 hp, for an even 300 hp. Nissan says 61 percent of the engine is new or revised. The CVT, however, is entirely new. Internal friction is reduced 40 percent, and an increased ratio range puts the gear spread on par with many eight-speed automatics.

The \$5260 SR trim goes further, providing Bose audio, nicer leather, and heated and cooled seats. More important, it deletes the heavy glass moonroof, for a lower center of gravity, and adds unique damper

tuning, stiffer springs, and a beefier front anti-roll bar. It’s also the only trim level offered with stickier summer rubber.

These changes pump life back into a once-beloved nameplate. The Maxima SR jackrabbits off the line, revs right to peak power, and stays there. On the freeway, the V-6 spins at only 2000 rpm. Demands for passing power are met with an immediacy close to an electric car. To duplicate the feel of fixed gear ratios, under heavy throttle, the CVT “shifts” to lower rpm, as if it’s selecting another cog. Of course, you’re not shifting anything, although the paddles on the steering column allow you to pretend this is a conventional automatic gearbox. There’s really no need to mask the CVT, though: This one is legitimately good.

So is the chassis. On a twisty road, keep the drive mode in Sport, which sharpens the powertrain and adds steering weight. The Maxima maintains an even keel, even when you’re chucking it into corners like a toddler on a Big Wheel. The luxosport bucket seats are supportive, and the flat-bottom steering wheel has a fat, leather-wrapped rim.

The Maxima is still no four-door sports car, but if you’re an enthusiast who needs a bigger back seat, you might find some truth here. —ROBIN WARNER

Nissan Maxima SR

PRICE \$38,495
POWERTRAIN
 3.5-LITER V-6,
 300 HP, 261 LB-FT;
 FWD, CVT
WEIGHT 3561 LB
EPA CITY/HIGHWAY
 22/30 MPG
ON SALE NOW



0-60 5.9 sec
MPH

ROLLING START 6.2 sec
5-60 MPH

STANDING 14.4 sec @ 100.0 mph
¼-MILE

TOP 150 mph*
SPEED

BRAKING, 125 feet
60-0 MPH

SKIDPAD, 0.83 g
300-FOOT

*estimated

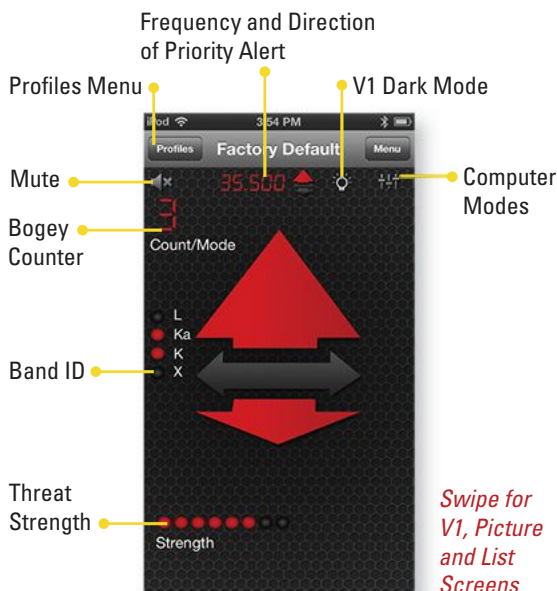
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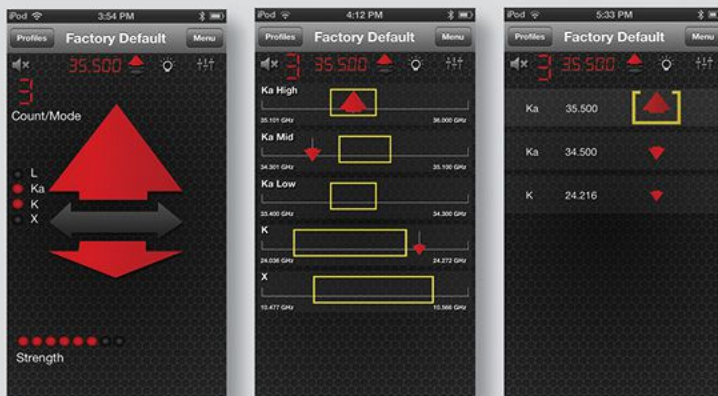
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**THE DEFINITIVE
JAGUAR**
SHOPPING WITH COLIN,
PAGE 94



SHOPPING WITH COLIN

1965 JAGUAR E-TYPE

E-TYPES AREN'T HARD TO FIND. UNLESS, OF COURSE, YOU WANT A GREAT ONE.

The Jaguar E-type should need little introduction to *Road & Track* readers. Its 1961 debut changed the sports-car world forever. Its huge 150-mph top speed was almost as staggering as its relatively low \$5500 price.

Enzo Ferrari called it the most beautiful car ever built. The componentry was as beautiful as its body, and it just plain worked. With fully independent suspension, power-assisted four-wheel disc brakes, rack-and-pinion steering, and a free-revving 3.8-liter triple-carbureted straight-six, the E-type was fast, comfortable, and extremely robust.

Five-plus decades on, it remains the aspirational British supercar. E-types appear in every top collection, including the Museum of Modern Art's, and their values still defy the laws of supply and demand. They are just that damn good.

The E-type came in three basic models or "series." Series 1 cars were built from 1961 to 1967 in both roadster (officially open two-seater, or OTS) and coupe (fixed-head coupe, or FHC) body styles, with covered headlights and taillights above

the rear bumpers. In 1966, a two-plus-two style was added, with a nine-inch-longer body and an unfortunate roofline. The 1961-64 cars had 3.8-liter XK power, and 1965-67s had the larger 4.2-liter version of the XK engine, all with triple SU carburetors. 1968 saw an unofficial "Series 1.5" version with open headlights, twin Stromberg carburetors, and other changes to comply with new U.S. regulations. Series 2 cars were produced from 1968 to 1971 in OTS, FHC, and two-plus-two configurations, all with the 4.2-liter six-cylinder engine, continuing with two carburetors, open headlights, and larger taillights below a single wraparound rear bumper. Series 3 cars were produced from 1971 to 1974. The big news was the 5.3-liter V-12 engine, offering the turbine smoothness you'd expect from 12 tiny cylinders. It gets a bad rap but is actually a great engine handicapped by packaging and emissions controls.

Here's the rub: Most E-types are total crap. For many years, E-types or not, they were cheap used sports cars. People could afford them but not the maintenance and repairs. If an E-type needs a clutch, the engine and transmission



WHAT TO LOOK FOR:

RUST/ACCIDENT DAMAGE Hire a specialist to do a thorough inspection of the body and chassis. Most E-types have been rusted, hit, or both—and it is incredibly difficult to put them “right” after that. With so many for sale at any given time, you can be picky.

PRICES S1 cars are the most expensive; concours-restored examples are pricey but less fun. Unrestored cars are not cheap either and are like garden gnomes in the Arctic. The best bang for the buck is a great, solid, driver-level car—a decent 4.2-liter FHC should be about \$100,000; an OTS, around \$150,000. Too much? Cut those prices in half for a decent S2 car—and that represents a serious value. Want more cylinders? The S3 V-12 OTS cars are appreciating nicely as well, with a strong nod going to the four-speed versions, for both fun and appreciation potential.

PARTS A complete industry exists for anything and everything E-type. There isn’t a part you can’t buy. There are also plenty of ways to improve upon the E-type’s performance via the aftermarket.

FOOD FOR THOUGHT While E-types aren’t the bargains they used to be, just think of how much they would be worth if Jaguar only built a few hundred S1 cars and then quit. They would be many millions of dollars a copy, so enjoy Sir William Lyons’s gift of economy of scale.

VERDICT I could easily take this entire magazine and explain the minutiae of E-types, but simply: If you want “the” E-type, you want a Series 1, the most pure of the E-types in appearance and function. Mind you, the earlier the car, the more valuable it will be; purists desire early S1 cars with external bonnet latches, welded-in bonnet louvers, and “flat” front floor pans. Prices have been skyrocketing lately with sales for some very special examples regularly exceeding \$300,000. As a guy who uses my cars, I like the later-production S1, the 1965–67 with the torquier 4.2-liter engine, full-synchro four-speed, and dropped front floors so my fat Yank feet can work the pedals. There are trade-offs. For one, the 4.2’s interior is a bit less cool, missing the sexy bucket seats and aluminum dash, and some say the 3.8-liter is a more eager engine. I’d trade all that for fitting in the seats and a little more low-end grunt.



BUY



PASS

have to come out as a unit, necessitating the removal of the complete front subframe and bonnet. Rear brakes? The entire rear subframe and suspension have to be dropped. And they rust. Everywhere. A serious issue, given the E-type’s semimonocoque construction. The engines, while robust, can have cooling and other issues.

I have managed to own some great unrestored E-types and, as an addict, am always on the hunt for another. So when I saw this 1965 FHC advertised as a one-owner, unrestored car with 23,000 miles, I had to check it out. It did not disappoint. The brakes were stuck and the fuel system was plugged with rotten old gas, but the car was a virtual time capsule. The original owner bought the E-type as his dedicated “show car.” There was no way I was leaving without it. After a few months of work, it’s back on the road, working brakes and all. ■

Contributing editor Colin Comer is R&T’s chief vintage-car buff. Any implication that his tastes parallel the Museum of Modern Art’s is strictly unintentional.



UNCONSCIOUS SPEED

YOU'VE BEEN TRAINING TO DRIVE ALL YOUR LIFE, WHETHER YOU KNOW IT OR NOT.



Look through the turn. Keep your eyes up. Don't fixate on the car ahead of you. These are the first lessons in any on-track instruction. It seems like magic: The farther ahead you look, the smoother and faster you get. But Dr. Peter Whybrow, director of the Semel Institute for Neuroscience and Human Behavior at UCLA, says there's no mystery to it. You've spent your whole life training your mind and body for this moment.

"The car's not following your eyes. Your eyes are giving your brain a signal that you want to go to the left or to the right, but your brain is doing the rest by preconsciously coordinating a complex series of behaviors that it has learned over a long time," Whybrow says.

And by "long time," he means years. If you've seen an infant struggle to pick up a stuffed bear, overreaching, falling short, never quite closing her hand in time, you've watched the child build the

fundamentals of visual coordination that she'll use for the rest of her life. She's constructing the frames of her proprioception, knowing where her wild limbs are in the space around her.

Those skills become so ingrained that they become habit, requiring no conscious thought. We all have this bit of brilliance. It's why you can close your eyes and put a finger to your lips, your knee, your toes, always knowing exactly where your hands are in relation to the rest of your body without the crutch of sight. It's also why you don't have to think about manipulating a car's pedals, steering wheel, or shift lever. It seems automatic, but your mind is constantly calculating, manipulating nerve and tendon and muscle.

Your brain receives a torrent of input from your senses, every second, every day. While driving, it takes in the press of acceleration on your lower back, the lateral pull of forces on your body as you enter a turn, the sound of the

engine moaning toward its limiter. It's all processed, largely without your immediate knowledge.

"Even though we think we're conscious creatures, only about 20 percent of what we do every day is actually driven by conscious awareness," says Whybrow.

The vast remainder, the preconscious, results in fast, efficient, and decisive motor actions. When you keep your eyes up on track, you stop relying on the slow, bumbling conscious part of your brain and call on the liquid-quick preconscious. You cash in on all those years behind you, the hidden mental habits that let you run through the rain, catch a falling coffee mug, or turn the pages of this magazine without a second thought.

—ZACH BOWMAN

Whybrow's new book, The Well-Tuned Brain: Neuroscience & the Life Well Lived, is available from W. W. Norton & Company.

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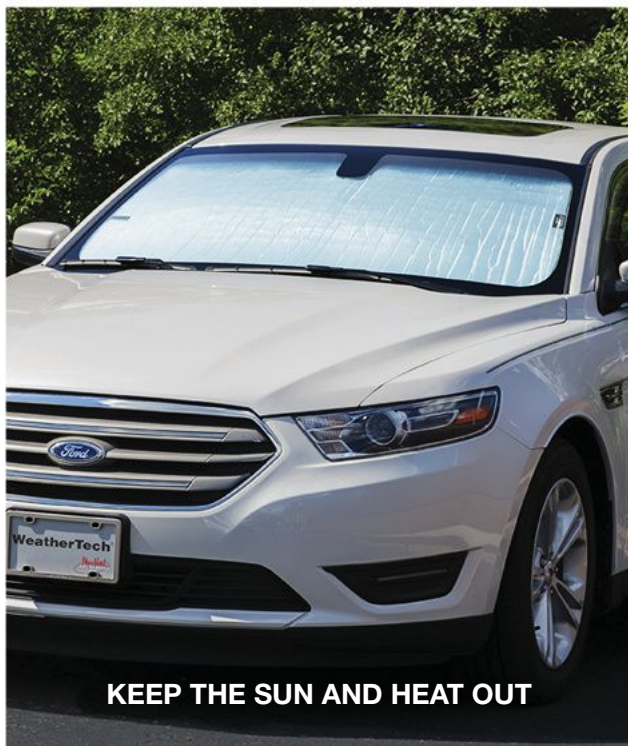
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ROAD TEST SUMMARY [SEPTEMBER 2015]

MAKE & MODEL
(ISSUE DATE)

PRICE AS TESTED
ENGINE TYPE
HORSEPOWER, SAE
TORQUE, LB-FT
CURB WEIGHT, LB
0-60 MPH, SEC
1/4-MILE, SEC @ MPH
TOP SPEED, MPH
BRAKING 60-0 MPH, FT
ROADHOLDING, G

MAKE & MODEL
(ISSUE DATE)

PRICE AS TESTED
ENGINE TYPE
HORSEPOWER, SAE
TORQUE, LB-FT
CURB WEIGHT, LB
0-60 MPH, SEC
1/4-MILE, SEC @ MPH
TOP SPEED, MPH
BRAKING 60-0 MPH, FT
ROADHOLDING, G

Acura ILX 2.4 (2/14)	\$30,185	I-4	201	170	2967	6.7	15.2 @ 92.3	138 ²	129	0.86
Alfa Romeo 4C ³ (6/14)	\$54,000 ¹	I-4t	237	258	2200 ¹	4.2	12.9 @ 107.8	160	-	0.95
Aston Martin V8 Vantage (10/12)	\$130,285	V-8	420	346	3685	4.6	12.9 @ 111.3	180	126	0.92
V12 Vantage S ³ (7/14)	\$218,330	V-12	565	457	3681	3.9	12.1 @ 120.5	205	123	0.93
Vanquish ² (7/13)	\$303,635	V-12	565	457	3935	4.4	12.6 @ 117.7	183	112	0.95
Audi A3 2.0T ³ (6/14)	\$36,645	I-4t	220	258	3338	5.5	14.2 @ 97.8	130 ²	123	0.90
R8 V10 Plus ³ (8/13)	\$191,445	V-10	550	398	3665	3.2	11.4 @ 123.4	197	118	0.96
RS5 ³ (1/13)	\$77,320	V-8	450	317	4060	3.8	12.2 @ 113.6	174	114	0.96
RS7 ³ (3/14)	\$122,545	V-8tt	560	516	4420	3.2	11.6 @ 120.3	174 ²	111	0.93
S3 ³ (3/15)	\$48,045	I-4t	292	280	3445	4.4	13.0 @ 105.7	155 ²	117	0.92
SQ5 ² (2/15)	\$57,625	V-6s	354	346	4326	4.6	13.1 @ 104.5	155 ²	116	0.88
Bentley Continental GT ³ (7/11)	\$215,675	W-12tt	567	516	5305	4.3	12.8 @ 111.3	198	117	0.89
Continental Supersports Conv. ² (11/11)	\$298,590	W-12tt	621	590	5515	3.9	12.5 @ 110.1	202	117	0.89
BMW 228i (6/15)	\$36,750	I-4t	240	255	3259	5.2	13.9 @ 100.3	155 ²	122	0.91
320i (6/14)	\$34,975	I-4t	180	200	3335	6.8	15.3 @ 88.9	130 ²	117	0.95
i8 ² (7/14)	\$136,625	I-3th	357	-	3380	3.8	12.3 @ 114.4	155 ²	119	0.91
M235i (5/14)	\$44,025	I-6t	320	330	3491	4.5	13.1 @ 107.8	155 ²	113	-
M4 (12/14)	\$81,425	I-6tt	425	406	3540	3.9	12.3 @ 114.9	155 ²	106	0.98
M5 Competition Package ² (3/14)	\$117,075	V-8tt	575	502	4300	3.8	12.0 @ 122.3	155 ²	122	0.92
M6 Gran Coupe (10/13)	\$141,775	V-8tt	552	502	4371	3.9	12.1 @ 120.0	155 ²	118	0.95
Bugatti Veyron 16.4 Super Sport ² (11/11)	\$2,765,840 ¹	W-16qt	1184	1106	4545	2.5	9.9 @ 145.8	258 ²	124	0.99
Buick Regal GS (12/11)	\$38,350	I-4t	270	295	3785	6.2	14.7 @ 99.0	152	119	0.90
Verano Turbo (12/12)	\$29,990	I-4t	250	260	3482	6.1	14.7 @ 99.0	128 ²	122	0.84
Cadillac ATS 3.6 ³ (10/13)	\$52,405	V-6	321	275	3536	5.4	14.0 @ 101.6	149 ²	119	0.89
ATS-V (7/15)	\$63,660	V-6tt	464	444	3700 ¹	4.3	12.6 @ 114.7	189	112	1.00
CTS-V Sedan (8/12)	\$71,505	V-8s	556	551	4310	4.2	12.5 @ 115.3	191	116	0.92
CTS Vsport ³ (11/13)	\$60,095	V-6tt	420	430	3966	4.4	12.7 @ 112.8	172	119	0.94
Chevrolet Camaro Z/28 (5/14)	\$75,000	V-8	505	481	3856	4.0	12.2 @ 118.3	172	115	1.09
Corvette Stingray (9/13)	\$67,915	V-8	460	465	3444	3.8	12.2 @ 116.5	185	105	1.07
Corvette Z06 (2/15)	\$105,210	V-8s	650	650	3536	3.3	11.5 @ 124.8	186	105	1.17
Corvette ZR1 (10/12)	\$125,295	V-8s	638	604	3395	3.4	11.4 @ 129.7	205	105	1.08
SS ³ (2/14)	\$45,770	V-8	415	415	3931	4.5	12.9 @ 110.2	159 ²	117	0.93
SS (3/15)	\$46,740	V-8	415	415	3935	4.7	13.1 @ 109.2	175	114	0.97
Chrysler 300 SRT8 ³ (12/11)	\$57,725	V-8	470	470	4430	4.5	12.9 @ 111.6	175	120	0.82
Dodge Challenger SRT8 392 (5/11)	\$44,380	V-8	470	470	4350	4.6	13.0 @ 109.8	180	117	0.90
Factory Five 818R (7/13)	\$25,377	H-4t	270	300	2012	3.8	12.5 @ 111.7	145 ¹	114	1.12
Ferrari 458 Speciale ² (10/14)	\$336,120	V-8	597	398	3199	3.0	11.1 @ 125.7	202	102	1.01
LaFerrari ³ (8/15)	\$1,322,712	V-12h	949	663	3485	2.4	9.7 @ 149.2	217	104	1.16
Fiat 500 Abarth (10/12)	\$27,050	I-4t	160	170	2660	6.7	15.1 @ 91.8	131	127	0.85
Ford Fiesta ST (12/13)	\$24,985	I-4t	197	202	2752	6.7	15.0 @ 93.7	135 ¹	121	0.95
Focus ST (11/12)	\$29,425	I-4t	252	270	3242	5.9	14.6 @ 95.2	154	118	0.96
Mustang (6/15)	\$38,455	I-4t	310	320	3657	5.6	14.3 @ 98.9	145 ²	126	0.95
Mustang GT (12/14)	\$45,885	V-8	435	400	3806	4.5	13.0 @ 112.0	165 ¹	114	0.95
Shelby GT500 (9/12)	\$65,075	V-8s	662	631	3850 ¹	3.5	11.7 @ 128.1	202 ¹	115	0.95
Honda Civic Si (2/14)	\$23,705	I-4	201	170	2958	6.5	15.0 @ 93.2	136 ²	117	0.91
Hyundai Equus Signature ³ (10/11)	\$58,900	V-8	385	333	4610	6.2	14.6 @ 98.6	149 ²	128	0.80

Genesis Coupe 2.0T R-Spec (7/12)	\$27,375	I-4t	274	275	3495	6.3	14.5 @ 99.1	146 ¹	124	0.92
Infiniti M56 ³ (1/11)	\$68,145	V-8	420	417	3930	4.6	13.1 @ 108.7	155 ²	121	0.87
Q50S ³ (10/13)	\$51,805	V-6	328	269	3675	5.3	13.8 @ 102.4	155 ²	123	0.86
Jaguar F-type R Coupe ³ (11/14)	\$105,875	V-8s	550	502	3929	3.7	11.9 @ 122.7	186 ²	110	0.99
F-type S ³ (8/13)	\$91,965	V-6s	380	339	3839	4.2	12.7 @ 110.0	171 ²	112	0.92
F-type V8 S3 ³ (12/13)	\$104,270	V-8s	495	460	3980	3.8	12.0 @ 120.0	186 ²	113	0.98
XFR-S ³ (3/14)	\$105,770	V-8s	550	502	4300	3.7	12.1 @ 118.3	186 ²	115	0.91
XKR-S ³ (3/12)	\$132,875	V-8s	542	502	4100	4.2	12.3 @ 121.0	186 ²	117	0.91
Lamborghini Aventador ³ (5/12)	\$406,905	V-12	691	509	3795	2.7	10.4 @ 136.0	217	108	1.05
Huracán ³ (6/15)	\$260,405	V-10	602	413	3440	2.8	10.6 @ 133.4	202	111	1.00
Land Rover Range Rover ² (2/14)	\$114,930	V-8s	510	461	5589	4.7	13.1 @ 107.7	136 ²	126	0.77
Lexus IS 350 F Sport ² (10/13)	\$47,955	V-6	306	277	3704	5.4	13.9 @ 102.1	143 ²	126	0.85
RC F ² (12/14)	\$73,225	V-8	467	389	4039	4.3	12.7 @ 113.0	170 ²	117	0.93
Lotus Elise S Club Racer (6/14)	\$59,000 ¹	I-4s	217	184	2000 ¹	4.8	13.6 @ 102.4	145	-	0.93
Evora S IPS ³ (4/13)	\$96,580	V-6s	345	295	3188	4.3	12.7 @ 110.4	178 ¹	125	0.97
Maserati GranTurismo Conv. ² (9/10)	\$144,335 ¹	V-8	440	361	4610	4.8	13.2 @ 107.8	176 ¹	114	0.87
Mazda 6 Grand Touring ³ (8/13)	\$31,490	I-4	184	185	3310	7.5	15.9 @ 89.3	128 ¹	129	0.83
MX-5 Miata Grand Touring (7/12)	\$29,655	I-4	167	140	2555	6.6	15.0 @ 92.6	128 ¹	122	0.90
McLaren MP4-12C ³ (10/12)	\$267,545	V-8tt	592	443	3270	3.0	10.9 @ 131.7	204	114	1.03
Mercedes-Benz CLA250 ³ (6/14)	\$36,545	I-4t	208	258	3297	6.1	14.6 @ 97.0	149	118	0.93
CLA45 AMG ³ (2/14)	\$60,095	I-4t	355	332	3635	4.1	12.6 @ 109.8	155 ²	112	1.03
E63 AMG S-Model 4Matic ³ (3/14)	\$106,825	V-8tt	577	590	4640	3.2	11.5 @ 123.1	186 ²	122	0.89
GLA45 AMG ³ (2/15)	\$64,525	I-4t	355	332	3637	4.2	12.7 @ 108.6	155 ²	110	0.95
SLS AMG Black Series ³ (12/13)	\$296,075	V-8	622	468	3716	3.2	11.1 @ 129.3	196 ¹	107	1.01
Mini Cooper S (10/14)	\$27,595	I-4t	189	207	2763	6.4	14.9 @ 94.7	146	126	0.84
Nissan GT-R Nismo ³ (12/14)	\$151,880	V-6tt	600	481	3880	2.8	11.0 @ 126.6	195 ¹	110	1.04
Porsche 911 GT3 ³ (12/14)	\$145,785	H-6	475	325	3269	3.1	11.3 @ 123.4	195	102	1.08
911 Modified by Singer (7/15)	\$575,000	H-6	390	315	2743	3.3	11.7 @ 119.2	176	114	0.93
911 Turbo S ³ (3/14)	\$193,755	H-6tt	560	516	3607	2.6	10.9 @ 124.4	198	115	0.98
918 Spyder ³ (8/14)	\$847,975	V-8h	887	-	3820	2.5	10.0 @ 143.7	214	108	1.07
Cayman S ³ (6/14)	\$67,995	H-6	325	272	3083	4.0	12.5 @ 110.5	174	-	0.95
Macan Turbo ² (2/15)	\$80,990	V-6tt	400	406	4542	4.2	12.8 @ 106.5	164	116	0.92
Rolls-Royce Wraith ³ (10/14)	\$368,624	V-12tt	624	590	5640	4.2	12.6 @ 114.2	155 ²	121	0.87
Scion FR-S (5/15)	\$27,838	H-4	200	151	2750	6.5	15.0 @ 94.0	137	120	0.91
SRT Viper TA (7/14)	\$120,480	V-10	640	600	3364	3.4	11.6 @ 126.7	206	112	1.01
Subaru Crawford BRZ (7/14)	\$63,830	H-4t	400 ¹	430 ¹	2786	4.4	12.9 @ 112.7	155 ¹	119	0.98
Impreza WRX STI (5/14)	\$38,190	H-4t	305	290	3375	4.8	13.3 @ 102.8	157	115	0.99
Tesla Model S P85D ³ (7/15)	\$129,820	EV	691	687	4933	3.3	11.8 @ 114.5	133 ²	123	0.89
Volkswagen GTI (10/14)	\$28,305	I-4t	220	258	3102	5.8	14.4 @ 98.7	124 ²	116	0.87

R&T CLASSICS

BMW Z8 (5/00)	\$135,304 ¹	V-8	400	369	3600 ¹	4.5	13.0 @ 106.5	155 ²	122	0.92
Cadillac STS-V (4/06)	\$77,690	V-8s	469	439	4390	4.7	13.2 @ 107.5	155 ²	126	0.83
Ferrari Enzo (7/03)	\$652,830	V-12	650	485	3230	3.3	11.1 @ 133.0	218 ¹	109	1.01
Lotus Exige S 240 (9/08)	\$72,505	I-4s	240	170	2065	4.3	13.0 @ 104.5	150	116	0.99
Saturn Sky (6/06)	\$26,150	I-4	177	166	2975	7.2	15.8 @ 87.1	120 ¹	132	0.91

LEGEND For **ENGINE TYPES**, I is an inline design; H is a horizontally opposed, or flat, design. V, VR, and W describe cylinder configurations; the number following the letter is the number of cylinders. An additional letter, a "t" or an "s," designates turbo- or supercharging; "tt" is twin turbo; "qt" is quad turbo; "d" designates diesel; "h" designates hybrid. "FC" designates fuel cell; "EV" designates an electric vehicle. **RED BOX** = leader in that category. **YELLOW** = new entry, estimated; *electronically limited; ²automatic/automated transmission. **ACCELERATION** is measured with one foot of rollout subtracted. **TOP SPEED** is typically as reported by the manufacturer, but we occasionally measure or estimate it. **BRAKING** distances are measured from the beginning of pedal depression to a complete stop. **ROADHOLDING** is the average cornering grip measured around a full skidpad lap in each direction. DATA APPLIES TO THE MODEL AT THE TIME (ISSUE DATE) OF TESTING.

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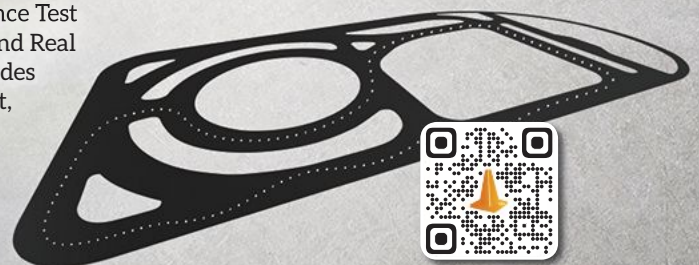
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100 PSI OILLESS
HOT DOG STYLE
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LOT 68049/62326
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PACK OF 100**
HARDY
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68498 shown

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90 AMP FLUX WIRE
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LOT 61849
62719
68887 shown

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130 PIECE TOOL KIT
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WOW SUPER COUPON

**PITTSBURGH AUTOMOTIVE
LOW-PROFILE
CREEPER**
• 300 lb. Capacity
LOT 69262
69094/61916
2745 shown

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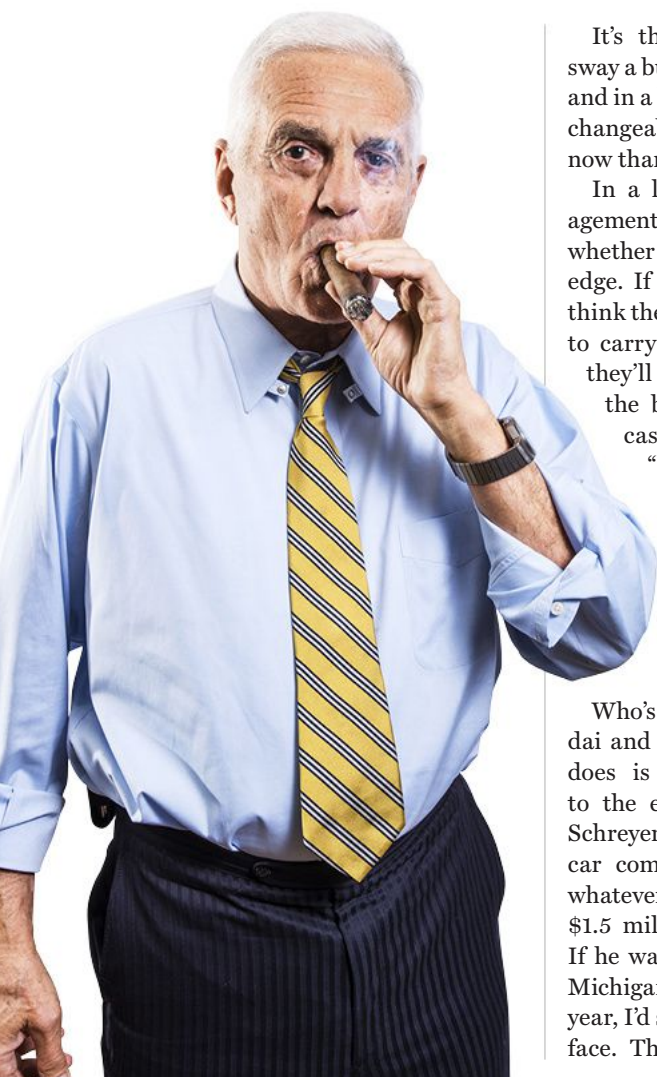
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Driven by Design

THE MVP IN A CAR COMPANY? HINT: IT'S NOT THE CEO.

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There aren't any bad cars anymore. They just don't exist. The days of seeing a comparison test of four cars where one is the obvious loser are gone, replaced by a new age of automotive equality. Reliability, braking, steering, handling, ride, and refinement are all largely on par across automakers and segments. That leaves just one chief differentiator: design.



It's the emotional punch that can sway a buyer from one brand to another, and in a landscape of increasingly interchangeable models, it's more important now than ever.

In a lot of companies, senior management lacks the ability to determine whether their designers are cutting-edge. If you ask many of them if they think their design capability is adequate to carry the company into the future, they'll say, "Oh yeah. We're probably the best in the industry." In most cases, the correct answer would be "better than we used to be, not good enough."

If he said he makes \$1.5 million, I'd offer him \$3 million.

Who's consistently at the top? Hyundai and Kia. Everything that company does is beautifully executed, thanks to the efforts of head designer Peter Schreyer. If I were running a major car company, I would poach him at whatever the cost. If he said he makes \$1.5 million, I'd offer him \$3 million. If he wanted a summer home on Lake Michigan and guaranteed bonus every year, I'd sign off on it with a smile on my face. That's how important outstand-

ing design is for modern car companies.

I'm guessing GM vice president of design Ed Welburn's total compensation is probably just over \$1 million, including bonuses and accounting for inflation over the last five years, but a top designer at one of the world's largest automakers should be earning way more than that. GM has about \$156 billion in sales, globally. Why obsess over paying the right designer \$5 million a year?

In other industries, it's ordinary for the designers and other creative people to make more than the CEO. The men and women who produce successful films make way more money than the studio head. That's normal. It's the same in fashion—the people who actually create the designs are the most valuable assets in the company. Cutting, sewing, selling dresses is routine.

The industry hasn't acclimated to this new prioritization of skill sets. Most still embrace the old hierarchy where the CEO is the important guy, followed by the president, then the CFO and the head of product development. Designers are way on down the line in terms of compensation, which is disproportionate to the value they bring to the company. Great design, great sales and profit. Good design, and you settle for a bit less. Average design, or "me too," and you'll be struggling with sales incentives, no matter how "good" the vehicle is.

Take the Tesla Model S. If that had been an ugly car, it could have an extra 50 miles of range and nobody would buy it. But designer Franz von Holzhausen did a wonderful job. It's well executed and fantastically beautiful with great

presence. It's wide, low, and strikes all the emotional chords. It resonates.

It's impossible to know how long it will take for the world's large producers to prioritize design in a meaningful way, but I hope it's soon. The new marketplace demands it. ■

The column's Q&A format will return next month. Bob Lutz has been The Man at several car companies, so your problems are cake. Bring 'em on.

JOSH SCOTT

300,000 MILES. RUNS GREAT.
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THIS '94 MIATA HAD 300,000 MILES ON IT BEFORE KENT PRATHER TURNED IT INTO A RACE CAR. FOR 10 YEARS IT SERVED HIM WELL, FINISHING EVERY SINGLE RACE AND WINNING FIVE NATIONAL CHAMPIONSHIPS TO BOOT. BUT THAT CAR IS FAR FROM FINISHED, BECAUSE IT'S STILL OUT RACING TODAY. THIS KIND OF RELIABILITY IS WHY ON ANY GIVEN WEEKEND, MORE MAZDAS ARE RACED THAN ANY OTHER CAR.

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